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Precision SHOOTING

Dealing exclusively with the topic of extreme rifle accuracy

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3/9/93
CERTIFIED BR-50 International

AN EVOLUTIONARY DEVELOPMENT IN THE BR-50 GUN

By Bruce Buckner

(THE STORY OF A BILL CALFEE CONVERTED-TO-RIMFIRE XP-100)

PRECISION
SHOOTING

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EDITORIAL

Inscribed on Oscar Wilde's tombstone in Pere Lachaise cemetery, in Paris, where he was moved nine years after he died, in 1900, at the age of forty six, are his own words:

"For his mourners will be outcast men
And outcasts always mourn".

We lost one of our columnists to Old Man Death in the past month.... Wayne Ash, of New Castle, Wyoming... occasionally known by the name that he so prized... "Longshot". No editor in his right mind would have given Wayne Ash two minutes of reading time before reaching for the Reject Slip pad. The letters were written in pencil, on graph paper, or whatever other kind of paper was apparently at hand. And if a few more thoughts on the topic occurred to Longshot after he sealed up the envelope... not to worry, he simply continued the letter on the back of the envelope. In his earlier correspondence to us, he emphasized that he was not writing for publication... he was simply writing me an informal letter about what he was up to with his long range shooting. After a few letters my interest was aroused. I obviously was dealing with a rather unique and singular character here. Not too many souls (that I know, anyway) would move to New Castle, Wyoming for the sole reason that they needed a lot of space for their long distance shooting and experimentation. Not too many souls (that I know anyway), in their retirement years, get up a couple of hours before dawn day after day, so that they can be set up for the commencement of firing exactly at dawn... when there was the least wind movement. Longshot did a great deal of his target shooting at 1,770 yards... which just happens to be a mile (for those of us who are mathematically inclined). It eventually dawned on the PS Editor (rather a slow fellow, at times) that he was reading input (admittedly in kind of jumbled form) from a shooter of which it could truly be said... that he was one of a kind. His letters talked about being out in Wyoming as First Dawn began to crack the Eastern sky, with the distant howling of coyotes for background, the birds beginning to move about, and the incredible solitude of the place. Eventually I decided that while re-writing his letters would be a major chore, I wasn't going to pass up an opportunity to publish such unique input. We pulled out a certain amount of (thinning) hair while rewriting Longshot's letters for our pages, but I thought it was worth the price. We have a few more at hand, and they'll be appearing here in our pages over the next few months. But Longshot himself is gone... hopefully to a place where the coyotes will still howl at dawn, where the night sky grudgingly gives way to first light, and where the wind is, as of yet, still. Rest in peace, buddy. I found you unique... and I hate to lose my "discoveries".

Every now and then... quite infrequently, if you really must know... a new product crosses our desk, or our line of vision... and causes us to sit upright... and say... hmmm. It happens maybe once or twice a year. It just happened, and it has us excited. Jim Cuthbert, honcho of JGS Precision Tool Mfg., out there in Coos Bay, Oregon, sent us a packet, with a cover letter. The packet consisted of a handsome loose leaf binder, with 88 pages. The accompanying letter said, in part:

Dear Dave,

I am happy to finally be able to make these statements to you. I have had a driving desire for 12 years to try to make quality prints of all types of chambers, both factory and wildcat, available to the serious shooter like yourself that are totally complete in all inceptions of various blend points, including diameters, lengths and constricting radiuses as to their start point and their end point. These prints have not been available from anyone in the past. It has been one of the most difficult demands for dedication that I have ever attempted.

We are finally arriving where we have our first collection of prints available. We have taken our most popular standard grade finishers and assembled them in a three-ring binder. I must say they are being received with excellent results. Almost everyone that has seen these booklets has wanted a copy. We are selling them for $20.00, which is a fraction of their worth. Thousands of hours have been involved in the development, the design and the computerization of these prints. We are enclosing a free copy for you to take a look at. If you have time, you might drop us a comment.

Also available right now as well is our first supplement, the 67 page collection of the Ackley line of wildcats. To follow are already-in-the-works supllements for metric, as well as old and obsolete calibers.

We are actively pursuing any quality prints that can be sent into us for entering into our data bank in which we now have more than 7,000 prints. We also sell copies of single prints for $2.00 each.

Mother didn't raise any complete fools. We looked over the 88 chamber prints, starting with the 22 rimfire, working their way through the many "standard" calibers, right up to the .460 Weatherby, with a representative sampling of some less-than-standard cases (the PPC, the BR, the 6x47, the 8mm/06, etc.) and we knew that this was something that serious shooters would want in their gun library. The prospects are made even more appealing with the soon-to-come supplementals... the Ackley line of wildcats, the metrics, the "classic" wildcats. So we picked up the phone, rang up Coos Bay, and said "Very nice. Send us 200 immediately". On this page you will find our block ad for the JGS chamber print binder. We've persuaded John Hollister, who handles our back issue and books department, to handle this distribution for us as well.

Continued on next page

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is pleased to announce
the immediate availability
of . . .

Their initial compendium of 88 chamber prints, showing exacting dimensions for the most common standard rifle and pistol cartridges of the day. The 88 prints are the initial offering in a planned series of chamber prints, with the first supplement, the 67 page coverage of the Ackley line of wildcats available now. Following shortly will be the metrics and the classic wildcats. The initial offering comes in an appropriate JGS embossed three ring blue binder, which will easily accommodate several of the following supplements. The book is appropriate as an addition to the library of the serious accuracy enthusiast, as well as the practicing gunsmith.

Price of the 88 page base set, including binder, is $20.00. The Ackley supplement is $12.50, plus $3.50 shipping and handling, in the United States and Canada. Order from: John Hollister, RD #2, Box 2395, Whitehall, New York 12887-9539. Mail order only, no phone call orders. Check is to be made payable to Precision Shooting. Mastercard and Visa orders accepted.

In view of the success that we had with the 1992 PS Annual, we are seeing, this month, the wrap-up of the printing of the 1993 PS Annual. A formal announcement as to its availability will be in next month's issue. Although this is somewhat subjective, probably the premier article of the 1993 Annual will be a complete re-write and expansion, by Dan Lilja, of his four part series of articles that earlier appeared in our pages on the topic of long range shooting. But there are major sized chapters from many of the popular PS staff writers... Messrs. Jourdan, Kindler, Mace, Nagy, Kayser, Cundiff, Harrold... and several surprising first time contributors. It looks like 16 chapters... and all dealing with the topic of "extreme rifle accuracy".

Ken Warner, Editor of Gun Digest dropped us a line recently. In our March editorial we were discussing novelist Stephen Hunter's new novel, "Point of Impact", and we remarked about finally having a novel produced by a writer who knows something about really accurate rifles. Mr. Warner politely mentioned that we had forgotten author Donald Hamilton's 1955 dated novel "Line of Fire", about a custom gunsmith who also dabbles in assassination. There is a good write up in the novel about the mechanics of making a .25 Souper (.308 necked down to .257) shoot acceptably. Mr. Hamilton is best known as the source of the Matt Helm series, but has on occasion popped up in unlikely places... such as the 1992 Gun Digest. Personally, we've always felt that his earlier novels were his best... Death of a Citizen, and The Wrecking Crew, but he has been a prolific and popular writer over the years.

We've added something new this month, something very new, as a matter of fact. Toward the rear of the magazine has recently been the placement of what we have to guess could be called "the associations"... with the IBS being the longest resident therein. The TCL gets a page during their match season, as does the American Conference; both of whom are concerned with hunter class competition. The rimfire competition world has the BR-50 page, and the more recent addition of the International Rimfire 50/50. Recently we were approached by a well known name that has been around the competitive shooting sports seemingly forever, a fellow by the name of Art Cook. It seems as if the good Mr. Cook has a reoccuring dream... that of an association that would promote competition in a number of the shooting disciplines... rifle, pistol, silhouette, high power, trap, skeet, sporting clays, law enforcement, and benchrest. An ambitious dream, certainly. Is Mr. Cook going to succeed with his dream? We don't know, frankly. In our day we've bet on a few horses that won by a dozen lengths... and a few that politely refused to leave the starting gate when it opened. Upon satisfying ourselves that the project did not appear to intrude upon any of the worlds... make that "groups" that we now serve, we entered into negotiations with the new group to have Precision Shooting become their official publication. In the final draft, we agreed to give the new group up to four pages a month, and to stay with the group for a full year. If the group succeeds, we'll formalize the deal a year from now. If it doesn't... we'll each go our way; good luck, and God speed. Their first coverage appears in this issue, back in the association portion of the magazine. If the plan, and the new group succeed, Precision Shooting magazine will come to the initial attention of large numbers of new readers, that we have not reached previously. I should emphasize that this magazine WILL remain one that covers ONLY "extreme rifle accuracy".

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We will have to monitor ourselves, so that the main portion of the magazine remains thus. I assure you that I will do just that. And finally, lest anyone feel that they have been shorted four pages of good reading each month by the new arrival... we have added four pages this month, going from 84 to 88 pages. Good luck, Mr. Cook!

1993 Benchrest World Championships — USA Teams

To: The Precision Shooting Readers

From: Glenn Newick

The date is fast approaching for twelve American team members to travel North to Lotaja, Finland. From August 2, to August 8, 1993, many nations best benchrest shooters will compete at 100, 200 and 300 meters; with our teams striving to uphold the honor of all Americans in International competition.

In 1991, a similar group voyaged to Frejus, France with the hope and desire to stand atop the podium — and be recognized as being astride the pinnacle of rifle accuracy. Those three teams from 1991 climbed that peak and together brought home gold and silver in the team competition. Team USA members also finished first, second and third in the individual competition.

Seven returning members from the 1991 team will be joined by five new faces, all anxious for a chance to surpass the achievements of our previous team. The 1993 team represents a solid cross-section of America. From Arizona to West Virginia, from New York to Texas, from Florida to Colorado. These men and women need your support.

The financial policy for Team USA requires each individual to be responsible for their personal transportation and lodging. We are asking your assistance to help defray team expenses such as entry fees, match week expenses, etc. Separately there is another fund raising activity with all proceeds being used for Team USA jackets.

* * * *

Would you please make a donation to the 1993 USA Benchrest Team? Where possible, all donations will be recognized in benchrest publications.

We all thank you,

Glenn Newick
Fund raising liaison
3609 Rice Boulevard
Houston, TX 77005
(713) 669-0925

Make checks to: Glenn Newick/WC93

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COVER STORY

An Evolutionary Development in the BR-50 Gun

by

Bruce A. Buckner, Jr.

INTRODUCTION

This is a story about what I (and some others) think is an evolutionary development in the sport of shooting .22 rimfire guns in bench rest competition. It started with a quest for a better way to to do the job and resulted in bringing together a new gun and a competitor new to BR-50 and the shooter placing second in a match against some of the best in the country. It happened in BR-50 because limited restrictions allowed new approaches and thinking. Bill Calfee built the gun and I was the shooter. This is the way it happened.

THE HISTORY

My friendship with Bill Calfee began with a search for someone to convert a Remington 40X rimfire target rifle to a magazine fed sporter. This project has never been realized, but a lot of other interesting things have happened along the way. Bill introduced me to two forms of shooting sport in which I had never really intended to engage and has taught me a great deal about rimfire rifles and ammunition. The latest project started out to be just another rimfire target rifle but wound up being a state of the art firearm for the specialized sport of BR-50.

I had wanted a 40X sporter for a long time, but the few I saw for sale were way out of my price range. Being interested in shooting .22 rimfires from the bench and in smallbore rifle silhouette, I had bought several 40X target rifles when the price was right. I thought about having one of these converted to repeater and fitted with a match grade sporter weight barrel. Talking to people at gun shows got me Bill Calfee's address and phone number. Bill and I found that we had a mutual interest in accurate .22's and this progressed into several rebarreling jobs. Bill's work is absolutely first class and (unlike some other gunsmiths with which I have dealt) thoroughly tests everything he builds.

Several years ago, I arranged to meet Bill at a gun show in Louisville, Kentucky to pick up the latest completed project. While looking for him, I spotted an unusual firearm displayed on a dealer's table. It was a Remington XP-100 converted from centerfire to .22 rimfire, fitted with a 14 inch barrel and silhouette sights. I talked with the gun's owner, John Morton, and it developed that the gun was built by none other than Bill Calfee and was known in silhouette circles as an "XP-22". It was the most interesting thing I had seen in a long time and I just had to have one. Several months later, I was shooting my own and found that it was as accurate as any .22 rifle I had ever fired. Bill numbers each gun he makes and mine was #28.

Since these guns were conceived by Bill to be used in International Handgun Metallic Silhouette Association (IHMSA) unlimited class competition, he kept urging me to shoot mine in a match. Finally, I did. Did I like it? Well, for the last three years I have shot a silhouette match almost every weekend from April to October. I shot silhouette matches while on vacation in Idaho and went to the IHMSA Internationals near Knoxville, Tennessee in 1991.

Unlimited .22 was the only class I entered at first, now I shoot all the .22 classes, plus field pistol and big bore revolver. Six silhouette guns of various types reside here now and they all get used. (Except the latest addition; I haven't shot that one in a match yet, I only got it in December).

So along comes BR-50. At my home club (Fairfield Sportsmen's Association near Cincinnati, Ohio), we have been shooting informal 100 yard rimfire bench rest for years. These are score matches fired with sporters or match rifles (separate classes for iron sights and scopes) on targets suitable for each type of rifle. The way our range is built, it would be difficult to conduct a 50 yard match so BR-50 didn't get a lot of interest around here. Then I heard from Dean Grua, a silhou-

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ette shooter and a mutual friend, that Bill was shooting his own XP-22 in BR-50. I talked to Bill about it and he urged me to get involved. I thought "oh, no, here we go again!" I managed to resist for a time, then the 1992 BR-50 Internationals was held near me at the Bluegrass Sportsmen's League (BGSL) in Wilmore, Kentucky. I couldn't go because of other commitments, but I heard a lot about it and recognized a lot of names from previous centerfire bench rest matches at my home club.

THE GUN

Finally, a friend and I went to BGSL for a match in December. I took my XP-22 (#28) set up with a scope but we didn't get to shoot because we got lost and didn't find the range in time. However, we did get to see part of the match and the scoring and got to talk to a lot of the shooters. Subsequently, I delivered to Bill the components to build another XP-22, this time to use in bench rest matches and probably BR-50 (even though I wouldn't admit that at the time). Bill and I had some long conversations about just how it should be set up and the final form wasn't worked out until he was actually working on the gun.

Subscribers to PRECISION SHOOTING who read the rimfire stuff will remember that BR-50 has a weight handicap factor and essentially no other restrictions. The handicap is simple, points are added to or subtracted from your score if your gun is less than or more than 12 pounds (one percent for each pound). I like this, because I think it invites innovation and free thinking. The creative gunsmith can use his imagination and skill to come up with something really new. And that is just what has happened. Instead of merely experimenting with existing bench rest rifle techniques, Bill Calfee has come up with something really new.

Bill's BR-50 gun (it's not really a conventional rifle or a pistol) is built on a Remington XP-100 action converted to rimfire (the XP-22 mentioned previously). A Remington 40X rimfire bolt is used, after being shortened and the bolt handle replaced with one from the XP-100 (see photo #1). Rear locking lugs are cut in the action (photo #2), a bolt/cartridge guide is installed as is a special bolt stop. The result is similar to the 40X action scaled down to XP-100 size (remember the weight handicapping in BR-50). The foreend of the factory XP stock is reinforced with glass bedding compound and a rail with detachable bipod added. A match barrel is fitted and the existing cen-

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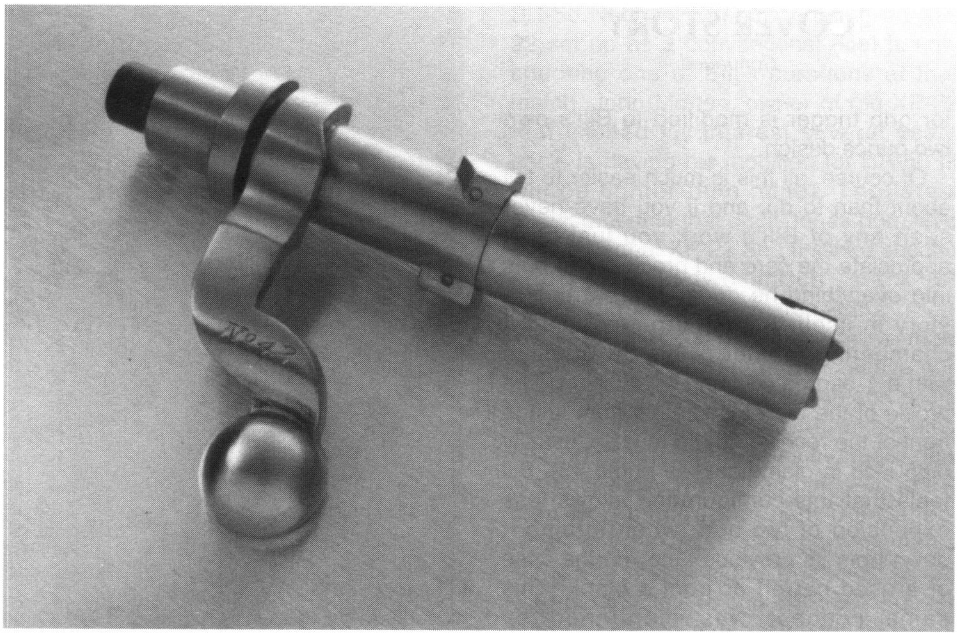

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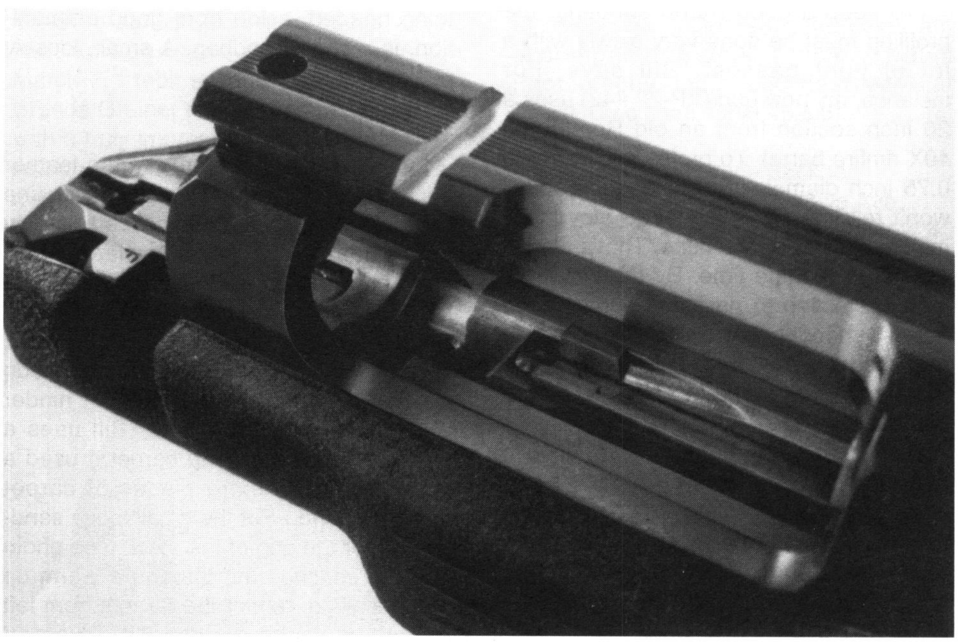

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COVER STORY

Continued

ter grip trigger is modified to Bill's own two ounce design.

Of course, all this is much easier to tell about than to do, and if you have never seen any of Bill's work you just can't appreciate the care and precision he puts into everything he does. The barrel is a story in itself. Bill is currently using a chambering reamer of his own design with a 1 degree 45 minute transition. The profile of the barrel is straight from just in front of the receiver to the muzzle, usually 0.85 inch in diameter (see photo #3). Bill feels that this configuration allows less expansion of the bore when turning it down from its previous taper (in the case of a used barrel) or from a blank. This same concept was mentioned by Geoffrey Kolbe (of Border Barrels, Ltd., in Scotland) in the March issue of PRECISION SHOOTING.

"To keep a good barrel shooting, the profiling must be done very slowly with a lot of light passes", Bill says. For instance, my new gun (XP-22 #42) uses a 20 inch section from an old Remington 40X rimfire barrel. To profile this barrel to 0.75 inch diameter (at my request, but I won't tell you why), Bill used eleven 23 minute passes on the lathe. That's almost 4.5 hours of lathe time. By the way, it is very interesting to note that some of the hottest shooting barrels in BR-50 today are used rimfire target barrels from old Remington 40X's and Model 37's. Figure that out.

Okay, we've got the gun all set up with two ounce trigger, match barrel, stock and bipod. Add a scope (24x bench rest quality) and a set of light rings and a light base (remember the weight handicap). My gun, #42, weighs in at exactly 6.5 pounds with a Bausch & Lomb 24x scope, Bushnell rings and a modified Weaver base. (Subsequently, the B&L scope was replaced with a Leupold 24x and that is the way the gun is pictured in the cover photograph.) The only other thing needed, aside from good ammunition, is a small sandbag. A small, loosely packed sandbag.

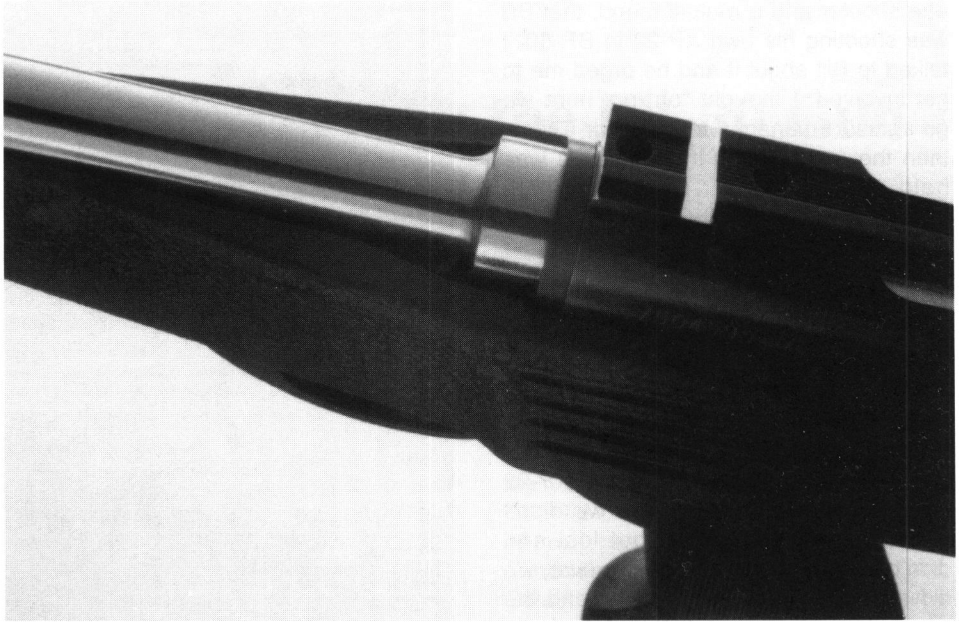

Photo #3

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THE MATCH

I went to BGSL in March with a leather brick bag packed tight as a drum with fine sand. The first thing Bill did was to empty about half of my precious clean white sand onto the ground. But he was right, the loose bag was much easier to work with than the tight one would have been. The idea is to put the legs of the bipod on a non-sticky surface that will not hinder the movement of the gun. (Bill uses a small piece of short nap carpet, I used a shop rag — no extra pieces of carpet being on hand.) Put the small loose sandbag under the grip of the stock (see photo #4). Bill coached me through a warm up match saying, "shoot the targets from left to right, then the reverse, NOT up and down", and "use the grip of your non-shooting hand to bring the gun onto the target with the sandbag, keep your trigger hand loose on the grip". As usual he was right. Any time I forgot and gripped the stock with more than minimal pressure, the shot went out. And it doesn't take much to put a shot out. Those BR-50 bullseyes are SMALL.

I practiced during the warmup and got familiar with the loose sandbag, looking forward to the match itself with some foreboding. After all, we were going to shoot 50 shots in 30 minutes. That isn't a very generous time limit. Most bench rest matches are a good deal more slowly paced and only five or ten record shots are fired in a relay. What actually occurred was one of the most intense 30 minutes I have ever experienced.

The fast pace seemed to help me maintain my concentration and I paid no attention to the shooters on either side of me. The wind flags, grip on the gun, trigger pull and shot placement filled my mind and I fired one shot at a time, just like the guys who write the books tell you to do. It was a windy day (aren't they all?), but the condition seemed to hold for me. I guess it was one of those days when you can't seem to do anything wrong. Finishing up with a few minutes to spare, I sat back to check over my target through the scope. It was the first time I had really looked at the whole thing and my impression was that I had not done too badly.

When the targets were collected, Bill

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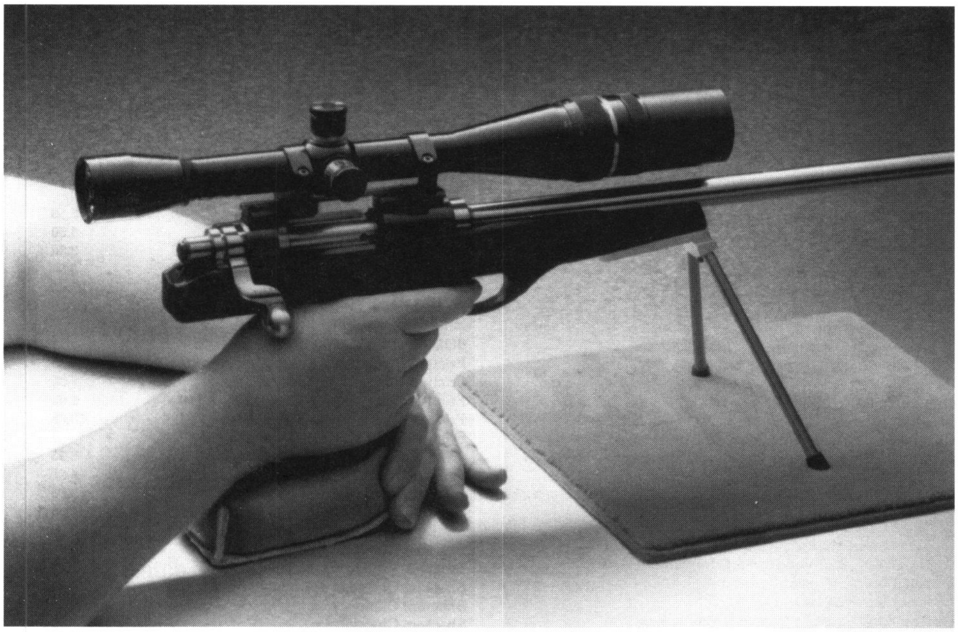

Photo #4

helped me score mine (after all this was my first match). The total was a lot higher than I thought it would be and there was one 500 grid. Bill said that if it held up through the official scoring process it would be a good score indeed and the 500 grid might be a record because of the weight of the gun. Well, it held up. In my first BR-50 match with a new gun which I had never shot before, I took second place. I couldn't miss. This gun shoots better than anything I have ever seen before, and I have owned and shot a lot of .22 rimfire rifles. The 500 grid turned out to be a state and "world" record because mine was the lightest gun ever to shoot a perfect grid (so far).

THE AFTERMATH

Bill's BR-50 gun incorporates something that I have been thinking about for some time and that is the lack of a buttstock. I am a large person with a very full face. One of my biggest problems with bench rest shooting is with cheek pressure on the stock and with shoulder pressure. I never could decide which worked best for me, free recoil or a tight hold. I don't have to worry about that anymore. The fact that the lack of a buttstock results in significantly less weight doesn't hurt, either.

Some shooters are skeptical about this approach, but not as much as they used to be. On February 7, Bill Calfee won the BR-50 match at BGSL using his XP-22 with an aggregate score of 3997. On March 7, I took second with a 4062 agg. Brenda Greiner took first on the same day with a truly impressive 4078 agg using an Anschutz rifle. (Brenda organizes the matches at Lexington and does a very fine job.) Warren McFarland (a previous BR-50 National Champion using an XP-22 set up as a conventional rifle) is now shooting one of Bill's creations at that match. John Morton, owner of the XP-22 that excited my interest several years back, is having his modified for BR-50 (it will be lighter than mine). The latest development is that Jack Jones borrowed Bill's personal XP-22 and finished second and first in a two match "stack" at Pensacola, Florida on March 28th.

The result of the lack of restrictive rules in BR-50 has allowed a truly creative guy with a lot of mechanical savvy and a driving urge to come up with something new, to do just that. Something really new and that really works. My hat is off to the man who made it happen, Bill Calfee. Now I have a problem. If I participate in a silhouette match every weekend, where will I get the time to shoot BR-50? I guess I'll just have to make a sacrifice somewhere. I would like to thank Jeff Kauck (a dedicated and accomplished smallbore rifleman and professional photographer) for taking the pictures on the cover and accompanying this article. (Kauck Photography, Inc., 1050 East McMillan Street, Cincinnati, Ohio 45206).

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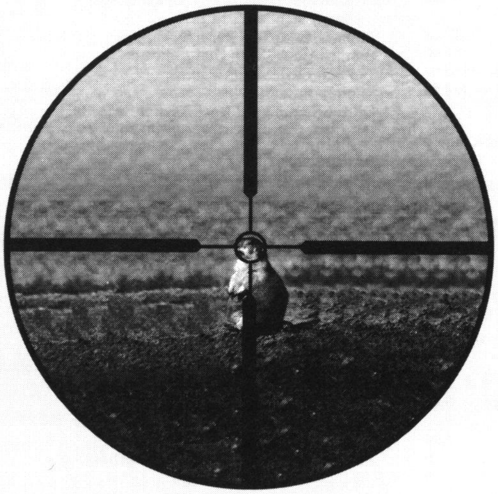

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BENCHREST 1992

PART 2

by

Glenn Newick

April 2, 1992 - American Shooting Centers - Club Match

Worried thoughts started interrupting dreamland at 3:30 AM. Remember the measuring device, targets, target frames, rifle and primers. Running matches usually kills your competitive chances. This time with only one relay and every other competitor helping with one chore or the other this match was a pleasant experience - a pleasant experience that is except for shots with a mind of their own.

In the garage at 5:15 this morning I had two blue MTM boxes of cases. One said Ugly/Lilja and one said Ugly/Shilen. The brain registered the correct box - then somehow the hands included the wrong box. Luckily, two matches in a row, the Texas Truck disgorged a vital item. This time an old box of .220 Russian cases with case necks thin enough to fit in the Shilen's .261" neck. A quick push into Larry Miller's Hammond full length die and let's go drill some groups.

At New Braunfels you use a lot of flags. Here the competitors wait for the bench rotation to be announced.

100 yards	200 yards
.395	.523
.151	1.001
.272	.485
.339	.828
.543	.446
.3400 6th	.3283 1st

Grand .3342 1st

A guess load with 15 thousandths engagement and 29.5 grains of GI H322 was too hot on the first group. Next load backed the bullet out to the lands and lowered the powder measure to throw 28.9 grains. All groups at 100 started small, four of the five had their first three shots below .150". Fifth group was a killer with the first three shots into a .0, then a pick up made me stop. After waiting a minute and a half, with Larry Miller watching, the flags turned back and filled in. I hit the sighter and buried the shot perfectly into a previous sighter - in the exact position of the record group. A quick follow up on the record dropped to .543". Ugly strikes again! Sixth place was pathetic with that .543". Pete Peterson was again the scourge of 100 yards with a .2794. Using a 4500 round barrel to boot.

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With the flags and targets at the longer distance today's conditions jumped up and bit most competitors. First groups' .523" won the match. Five quick shots in a let-up made it easy. Any who waited for a calm flung satellites as the wind picked up in tempo with the reducing time limit. Group two and three in a clump then a bad chase as time ran down. Three and five were easy. Willing to settle for .750" in the worsening conditions the small groups were a bonus as the holds up and down wind all dropped shots into the group.

This was the first time using .220 brass and GI H322 with Ole Ugly. What do you know? First. Unlike the last club match where we had two relays and no time to load this one had one relay and lots of help. I could actually concentrate and use the entire seven minutes.

Notes: Clifton Rue shot well at 200. He stuck four groups under an inch. Ray DeSio showed his inexperience when the wind saddled him with some monsters. Ugly even won four out of 10 cash options. Wonders never cease. Two hundred was fun with Pat Byrne in second place way back at .4281.

Continued on next page

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BENCHREST 1992

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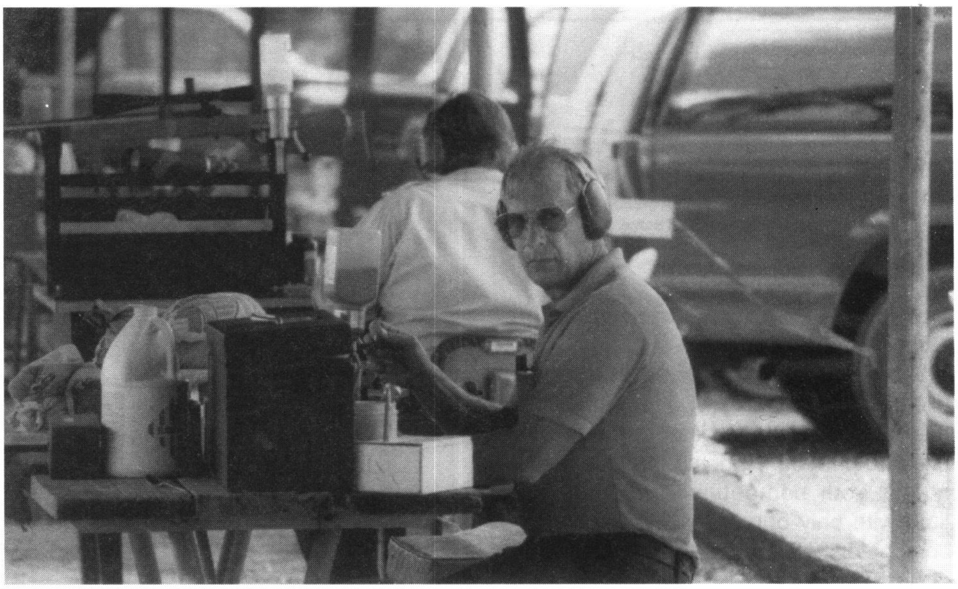


Jake Gottfredson.

April 23, 1992 - American Shooting Centers - 200 Yds Practice

Fireformed some Sako USA 6PPC brass for the CPS Heavy Varmint and shot three groups. Used 24.8 grains of H322 Australian for the fireform load then shot one group at 25.4 and two groups at 25.7 with the bullet at the lands. It was windy over the left shoulder with most of the conditions at eight mph gusting to 15. Next was shooting the CPS ALV using up some previously loaded ammo. Need to try again tomorrow and see if both rifles are functioning properly. Small groups for the day were a pair of .607's.

April 24, 1992 - American Shooting Centers - 100 Yds Practice

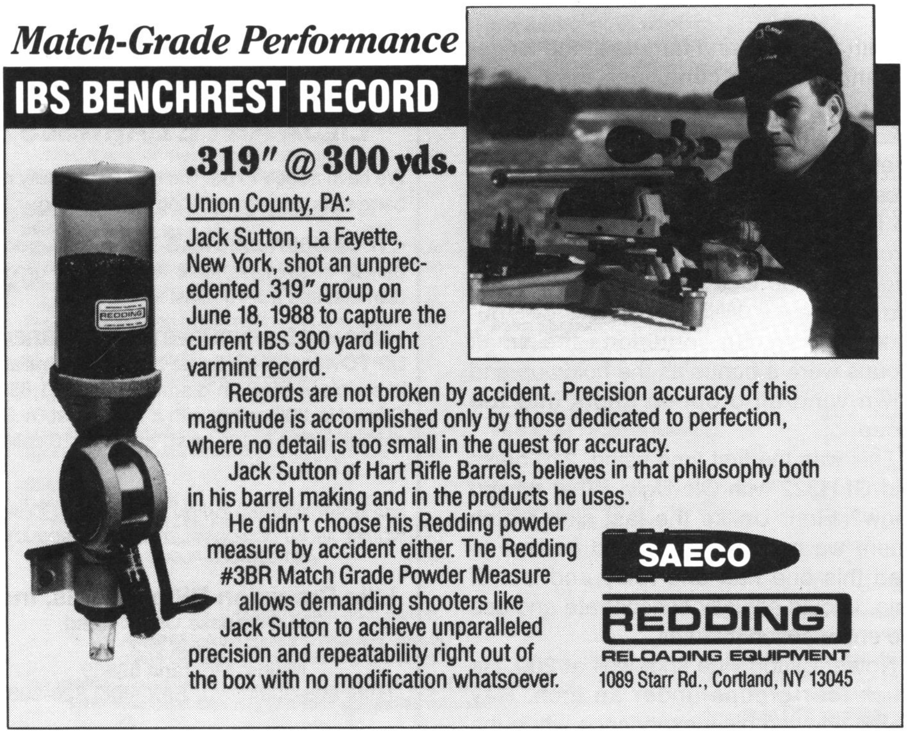
Took Buck with me to work. Left work after checking out the last few controls. went to the park and ran Buck first, then jumped across the street to the range for 19 quick shots with the recut brass. Could it be the case necks have been too tight for the last few years? I hadn't checked case neck thickness since giving my tubing ball micrometer to Dickie. It seems the neck turner was cutting less than I thought. The case necks had less than .0001" clearance when loaded with a .2434" bullet. Today the groups didn't seem to clump as well as the conditions indicated was possible - later - rush to pack, drop Buck at the kennel, speed to Carter's Country to pick up an order for Jake Gottfredson, off to the bank for some money and then to the University of Houston for Lee. I was rushing a little too much and abused the clutch on the Turbo Saab. Just what we need - spend more money. Luckily - because Mike Becker couldn't come at the last minute, we had a room at the Red Roof Inn one exit West. The Lafayette area has a habit of scheduling a Crawfish festival the same weekend at the Crawfish Invitational. We would have slept way down the road in New Iberia if Mike's room hadn't come available.

Notes: Small group was only a .249". Big group was a .435" - Blech!

April 25/26 - Lafayette, LA - Crawfish Invitational

Woke up to rain and thunder starting at 3:00. Slopped out to the range and needed four wheel drive to get back into the loading area. Sloppy conditions for the first couple matches then the rain stopped. Overcast kept the mirage away, but, the front coming through put the spastic twitches into the flags. My 100 yard shooting has come back to where I'm consistently competitive. In the top couple after the first two matches, in second behind Dennis Reed after the .204". On the last group I stole four shots in a clump. First shot on the record was only thirty seconds into the match, then three more at three minutes. I hit the sighter till the last few seconds when I was forced to shoot through a reverse and pulled the group out to a .292". Though that was big enough to drop me back to fourth it was worth the try for the aggregate win. Dennis went big with a .341" on the first relay and I knew any .1 would win the match. This year I'm getting more opportunity to try for wins. That's a good feeling after last years terrible performance.

First group at 200 I had my head so far in the clouds it was ridiculous. With an inch and a half on the first two shots - couldn't even keep it in the middle. These were tough conditions. We couldn't go to the sighter, everything would change before the record shot.



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All the wives enjoyed the shopping, then participated in the crawfish boil and Cajun band in the evening.

LV100	LV200	HV100	HV200
.137	1.590	.155	1.122
.224	1.095	.234	.890
.295	1.379	.302	1.953
.204	.789	.429	.527
.292	.632	.462	.965
.2304	.5485	.3164	.5457
4th	68th	22nd	62nd

Grand .3895 31st Grand .4311 49th
2Gun .4103 34th

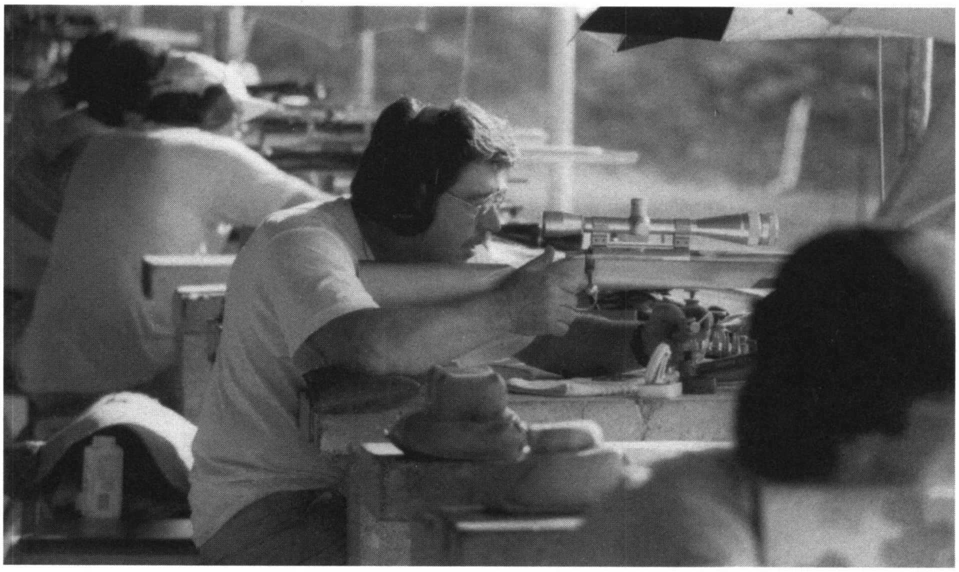
I pulled out the White Whale Sunday morning. Cook bullets seem to shoot best in my rifles when they are backed off the lands. Using the new lot of Australian H322, the first three groups at 100 left me in seventh place. The fourth group was terrible when shots four and five were both quick-switched out the left side.

All-in-all this was a frustrating weekend. Both rifles were capable, but numerous times those little reverses snuck bullets out of the group. Even when looking out the off eye, in the short time it took to refocus through the scope, the field would change and suck out the shot.

On the 1.953" who knows where the shot came from. The first three shots in a gentle right-to-left measured .550". Number four stepped out three rings then number five, with the same hold, buried in the middle of the first three shots. That group moved me back 50 places in the aggregate. Better luck next year at the Crawfish, but it looks like there are some match wins in this years future.

Notes: It was a 27 hour drive for Dwight Scott and John Innman to come down from Michigan. They weren't too sympathetic to the complaints from the Colorado kids who only drove 24 hours.

In Light Varmint and Heavy Varmint used the same load of 65 grain Cooks with 26 grains of H322 Australian and the bullet less than 10 thousandths off the lands.



Bruce Atkins.

May 2, 1992 - American Shooting Centers - Unlimited Practice

Over the winter the Tex-Ass Kicker received a new return stop. The old stop was integral with the front pedestal and I thought there was a chance it was causing some of the movement while shooting. Charles Blanton let me use his mill for the angled cuts and I did the turning on my South Bend. With few complications the installation went together and seems to work well.

A stiff breeze from 6:30 over the shoulder; reasonably steady at 8-12 mph. Letups went high and left, pushes low and right. I need to work on feeding loaded rounds into the port quickly. By hurrying, sometime, the round feeds in sideways or kicks around and causes a partial jam.

Some of the groups went together well considering the conditions. The best five shotter at 100 yards was .330". The best 10 shotter went .395". The only kicker for the day was on target #3. With the same hold, four shots measured .270", but, the fourth shot stepped out to 2.964"?

Notes: Had four flags out; two on each side of the bullet path. Load was 28.3 grains of Australian H322 in .220 Russian cases with Cook 65's and the old 36X Leupold. This years shot total is only 1355. This time last year the total was 1553. The difference must be because of the soggy range conditions in February and March.

Continued on next page

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BENCHREST 1992

Continued

May 10, 1992 - American Shooting Centers - Club Match

Another club match, this one on Mother's day. The conflict kept the attendance down to 10 shooters. Several of the big boys showed and we had a good match in some rough wind. How rough? The two largest groups at 100 were .8 and .9, and there were only two .1's at 100. The first was Bill Hull's .158" group on match one. Watching as he nibbled and doped in the last three shots was a thrill, each barely tickled the left or right edge in these tough conditions. Two hundred calmed slightly, but there was still trouble for the unwary. Any group .900" or less would make up ground on the others.

100	200
.235	.601
.218	.865
.236	.670
.347	.636
.322	1.380
.2716 1st	.4152 2nd

Grand .3434 1st

On match five at 200 yards the first three shots clumped up several rings downwind. Then the Texas Twitches hit the flags with many strong gusts. Three sighters piled into .220" on the 6-ring! I miscounted the hold. After holding two rings short and drawing Frank Terrill's chuckles with the fourth shot, the last shot was easy.

Notes: Ann Hull told of reading last years diary to Doug Shilen at the shop. She inserted her name in all the sentences relating to getting ready for the Super Shoot. "Ann Hull helped load the RV for the trip to Ohio." She said Doug was about busted up as he tried not to laugh. This was another match where the grand was a runaway. Second place was way back at .4016. The setup was Slim with the Hart barrel #4, 26 grains of H322 behind Cook 65's and the new Bald Eagle squeeze top and ribbed front bag.

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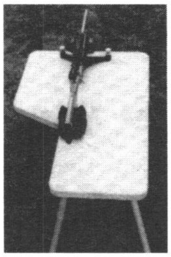

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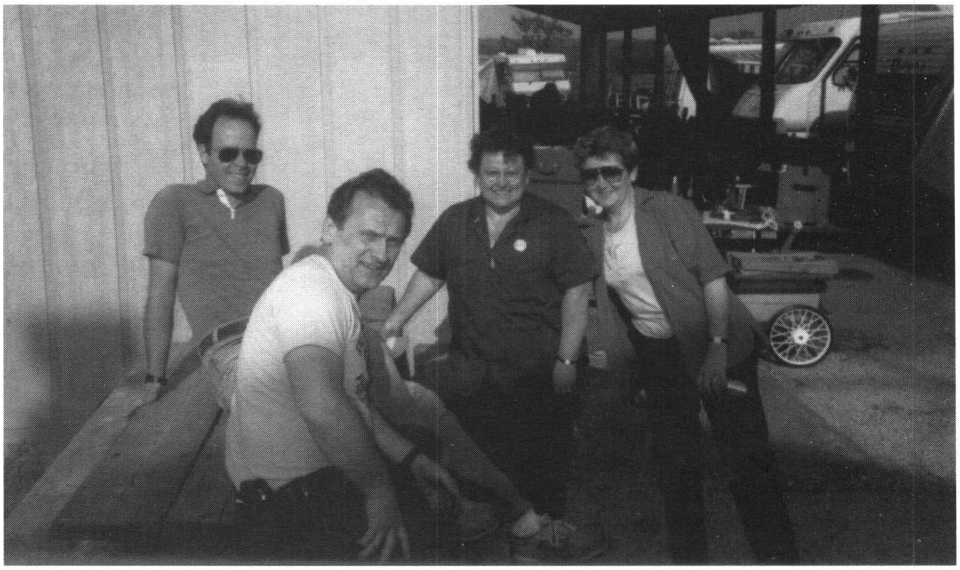

Supershoot XX with Bob White, Faye Boyer and Edna White. Partezana Photo

May - Kelbly's Range - Super Shoot XX

Leaky clouds, Buck wants to eat, hot water is pouring through ground coffee beans - for 5:30 in the morning a good two out of three's not bad. Twenty four hours on the road leaves time for reflection. We must shoot well this year: it's a qualifying match for Finland.

First thing after stumbling from the camper was walking over to Clarence Hammond's to pick up Ugly's replacement. It's a Sporter with a Hall graphite stock, left bolt right port Stolle Panda, Shilen barrel, Jewell trigger and Meredith bedding and paint. After Tom Meredith broke his leg by slipping on some ice he got behind on deliveries to gunsmiths. Clarence took an airfreight package with the painted stock and quickly chambered the already started barrel in the last couple days before he left for the tournament.

Individual shots with a cleaning in between showed lots of green for the first couple shots. A heavy push from 2:00 to 10:00 put a little vertical into the groups. The five group practice agg at 100 was .3358 with two .4's from missing a change and three .2's when it all went well.

Light varmint 100 and 200 both showed promise, but each ran into trouble finishing groups. Concentration: speaking of it doesn't accomplish the goal. Concentration means stopping before a shot spoils the group. There was lots of inner tension at this match - trying to shoot well. I missed some condition changes and spoiled several good starts. One of them measured .104" for the first four shots.

Light varmint two hundred yards showed no good groups and a few mediocre efforts. One target had a crossfired group from two backers uprange - that confused the effort. Luckily the bogus group was away from the center of the target. Unfortunately, by the time everything was straightened out we were down to two minutes and it was blowing like crazy.

Heavy Varmint 100 yards Slim came out of the gun case. Things improved immediately with a .165 on the warmup match. The record matches came close to good groups, but two drop outs, because of conditions, when the other competitors shot .1's in their record strings kept me mired well back in the pack. Worked real hard on the last group, shooting through three conditions, to finish with a two and the aggregate in the twos. There is something different between the air in Ohio and on the Gulf Coast. I have been overholding shots significantly the first three days.

	10.5#		**13.5#**	
	100	**200**	**100**	**200**
W/U	.302	.683	.165	.825
1	.331	.705	.292	.931
2	.416	.958	.236	1.029
3	.518	.956	.308	.526
4	.268	.832	.344	1.157
5	.175	.716	.286	.678
	.3416	.4167	.2932	.4321
	124th	104th	79th	107th

Grand .3791 108th Grand .3626 82nd
2Gun .3708 79th

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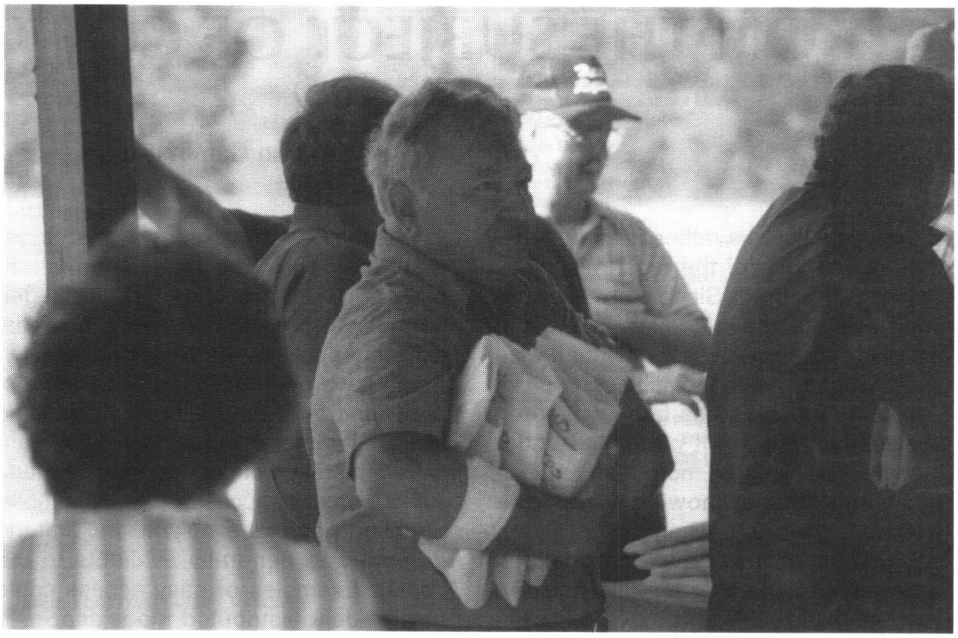
The first couple days have shown how improper practice has limited value. In order to shoot well at the National level matches you must stop on the wind shifts. Here the wind was shifting quickly, and the first two days I wasn't on top of things. Starting on Friday with HV100 and moving into Saturday for 200 the opportunity for better groups was there. Most spoiled groups were on the last shot, trying to finish in the evenest conditions available. Since the breeze was so erratic I had been jumping on the first available steady condition. Speaking with Larry Miller we found a few differences in style. Larry was fourth in HV100. He ran his shot string as the breeze built - and finished most groups as one string. I was starting as the condition backed down, and rarely finished the group five in a row.

The turn-around in conditions Saturday afternoon was incredible. Suddenly an inch group wasn't bad. The only bad luck in HV200 was the last shot of match #4. Several sighters impacted close to the group, but a last shot flag twitch pushed the .6 to a 1.157". Without that bit of bad luck there would have been a big difference in the finishing position.

Notes: George Kelbly really gave me the business about whipping me by two places in the 2Gun. Clarence Hammond gave me some good hints about what to watch for between the angle of the flags and velocity. I didn't make most of the match goals - actually I didn't make any of them. Kent Reich went through all kinds of trouble with a new rifle. It was overweight and he changed scopes. The new scope wasn't on paper, then it slid forward off the front base where all he could see was grass in front of his bench. He was pleased to finish with everything happening.

Evening fun with the Canadians included watching everyone pick on Jim Fedorowich. He made a mistake bragging about his new solvent proof Meredith paint job. Everyone took turns getting up and pouring something on his rifle stock: Shooters Choice, Sweets, Hoppe's and beer! You know, he was right, that stock was impervious.

H322 Australian is HOT, like T. It's denser than the Scottish we were used to and the same volumetric setting throws a hotter charge. Light Varmint, with the new rifle, I used 26 grains of H322 Australian in a USA case with Cook 65's. In Heavy Varmint I got some used .220 Russian cases from Jake Gottfredson and used a 28.3 grain load of Australian H322 with Cook 65's off the lands.



Raymond Brunet with his typical armfull of trophies.

Pat Byrne.

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ON THE SUBJECT OF COPYRIGHT LAWS

by

John Gammuto

Copyright law is a rather limited area of the law, but one of the most misunderstood and ignored. Since I own several copyrights, and have a vested interest in the publication business, I thought it wise to educate myself on the subject.

With as much as has been written on the subject, copyright protection under the law is still ignored more than respected. Many people knowingly copy the works of other and, when caught in the act, insist that they have done nothing wrong. It should come as no surpise to you that the law reads otherwise. For the most part, copyright law is civil rather than criminal, therefore monetary damages are set by statute.

Here at the magazine we occasionally have to wrestle with the question of copyright. As distasteful as it is, it is part of doing business these days.

Most problems stem from the fact that people do not take the time to investigate the copyright laws as they apply to their individual situation. The following should correct the misinformation some among you hold to be true, and prove to be informative to those who have never given the subject much thought.

The idea/expression concept mystifies most people, and rightfully so. It is somewhat confusing.Simply put, an idea can not be copyrighted, but a tangible expression of that same idea can be. Much of copyright protection and enforcement is subjective and guided by such esoteric terms as "substantial similarity," and "series of abstractions."

Typically, to prove copyright infringement, among other things the plaintiff must show both access by the alleged infringer to the original and substantial similarity between the original and copy. Some have gone beyond this element of proof and held that, if there is "striking similarity" rather than "substantial similarity," an inference of copying may be made without proof of access. Access is another abstraction that simply means that the original was generally available to the copier. Examples of easy access could be a widely distributed magazine, or a published/exhibited work of art.

Many people, including some business people are not aware that what is protected by copyright in one medium may not be copied by someone else in another. For example, a computer operator/specialist may not transcribe, optically scan text, graphic depictions, or other copyrightable materials onto floppy discs, optical discs, etc... To this same extent, an artist may not even copy the work of a photographer.

Photographers are very active when it comes to bringing infringement lawsuits when they believe an artist has copied their work. Interestingly enough, Congress granted copyright protection to photography long before it was generally accepted as fine art.

Major revisions to the U.S. Copyright Act of 1976, subsequently enacted and enforced in 1978, significantly upgraded individual rights relative to ownership of copyrightable material. Protection now extends to life, plus 50 years. Writers, photographers, painters, who I will refer to as "artists" from here on out, automatically retain copyright even when their works are sold. This is very difficult for some people to accept, and they get themselves into trouble.

Unless the artist specifically sells or transfers his, or her copyright along with the actual work, no one has the right to copy it, or reproduce it in any manner without permission. There is no other reasonable interpretation of the law. To further clarify the point; collectors of fine art may not buy a piece of artwork and then have prints produced without the artists permission, period. This also applies to manuscripts, photos, etc... In other words, any creative "deliverable" is covered by copyright law.

Until recently, for authors to receive full copyright protection, they were required to place full copyright notices on their manuscripts. However, with the ratification by the United States of the Berne Convention, an international copyright treaty, this is no longer necessary. A writer need only sign the manuscript, without adding the copyright symbol and year of completion.

Nonetheless, and this is the confusing part, writers must still use the full notice (name, date, and copyright symbol) if they want full protection within the U.S. judicial system. As an individual, I protect myself by satisfying these requirements whenever copyright protect is important to me (something from which I generate income).

There are two prerequisites to Copyright protection in the United States. First is the notice, and second is registration with the U.S. Register of Copyrights in Washington D.C. There are several advantages to registering your work. The first is evidentiary (proof of copyright registration). A copyright registration must be completed prior to the filing of any complaint in an infringement matter. While there are some technical exceptions, the safest thing to do is register your work.

Registration is also a prerequisite to recovery of statutory damages and attorney's fees. This is the most valuable of the advantages. Copyright litigation is often quite expensive and not economically feasible for most people, unless there is some legal equalizer. The threat to the infringer of having to pay both side's legal fees is substantial and usually bring the offender to the settlement conference with his checkbook in hand.

The question of what the owner of the copyright can do to an infringer should interest most people. There are seven basic remedies. They are injunctive relief; impounding and destruction of infringing copies; actual damages to the plaintiff (originator/owner); recovery of the infringer's profits; statutory damages within the judge's discretion; attorney's fees and court costs, both of which can be quite high in cases such as this; and criminal sanctions.

A word of advise - the written word, photos, and works of art are all classified as subjective, so also are the penalties for infringement.

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GEZA NAGY CONTINUES HIS PPC TESTING

PART I

VIHTAVUORI OY (N 130) POWDER TEST

MADE IN FINLAND

This powder, (N 130) is the same powder used by Sako in the PPC cartridge for use in their rifles.

This test is designed to test the pressure limits of the powder. Original 220 Russian cases were used in this test. Each shot was with a different case for each successive Culver setting. The bullets were 68 grain Euber flat base lot 52. The primers were Federal 205M lot 3B1690.

SHOT #	CULVER	GRAINS	VELOCITY	INCR.	
1.	48.5	26.6	3148 FPS	---	TARGET-A
2.	49.0	26.9	3179 "	+31 FPS	
3.	49.5	27.2	3208 "	+29 "	
4.	50.0	27.5	3233 "	+25 "	
5.	50.5	27.8	3274 "	+41 "	
6.	51.0	28.1	3301 "	+27 "	TARGET-B
7.	51.5	28.4	3318 "	+17 "	
8.	52.0	28.7	3352 "	+34 "	
9.	52.5	28.9	3359 "	+ 7 "	
10.	53.0	29.1	3378 "	+19 "	
11.	53.5	29.4	3408 "	+30 "	TARGET-C
12.	54.0	29.7	3444 "	+36 "	

There was a sudden increase in pressure on shot #11 - 29.4 grains - 3405 FPS velocity. The primer flattened much more than in my other pressure tests, Shot #12 was even worse. I had to pound the bolt with the palm of my hand to get extraction. That shot was with 29.7 grains at 3444 FPS velocity. I stopped the test there.

I could not comprehend the accuracy that developed during this simple pressure test. The first 5 shots had 5 successive increases of the Culver settings (1.2 grains of powder difference). The group size was an unbelievable .147. The variation of velocity was 126 FPS in that group. See target A.

That is why I continued the next 5 shots on the lower left sighter bull. These 5 shots again formed an unexpected .193 group. With 1.1 grains of powder difference and 77 FPS velocity variation, it still resulted in a respectable group. See target B.

There was a noticeable increase in elevation over the first group, and even in the group itself. The last 2 shots (target C) showed an increase in elevation. These were the high pressure loads that I stopped the test on.

The weather was sunny and warm during this test. The temperature was in the 60's. The barometer was 30.28" and the relative humidity was 60%. The Pro Tach chronograph was ten feet in front of the muzzle. The elevation is 20 feet above sea level. It was a pleasant day for February. I was lucky I made a portable sun shade to protect my eyes from the low mid-afternoon sun on the southwest facing range.

The windage was light and variable, mostly from between 10:00 and 1:00 o'clock.

I compared the results of this test with the one I did in the morning using H322. This powder was over one grain lighter by volume with the same Culver setting. The chronographed velocities were surprising close with the same volume for the first eight shots of this test.

The next time we get a nice day I will test for accuracy. I will work around a velocity of 3200 FPS in ths same barrel. It looked very promising in target A.

Geza J. Nagy

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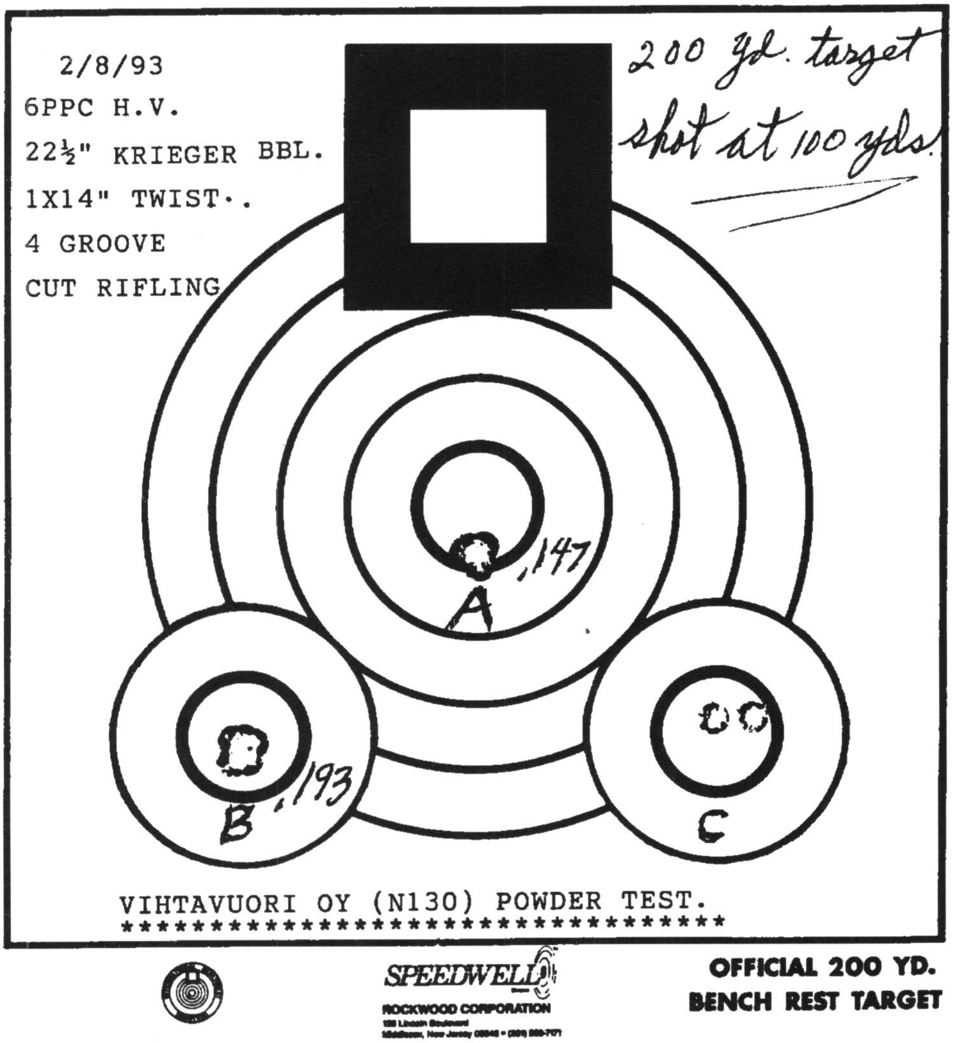

WARNING!

This was a designed test to check the strength of the powder in a rifle that has previously proved capable of withstanding very high pressures. Under no circumstances should these charges be duplicated by weight or volume without working up a safe load from a lower starting point.

PART II

PRESSURE TEST RESULTS

I cheated a bit here, and used the same 12 shots that were used in Part I (above), and made them do double duty by actually running two tests at once.

You will recall that I used .220 Russian cases, firing 10 different cases, one shot per case. The 11th and 12th shot were actually cases #1 and #2, being reused. That fact was not so important as to make a point out of it in the first test... but now it becomes something that should be mentioned.

Shots #1 through #9 inclusive were fired with cases that had been trimmed to 1.490 length before the test. You will recall that shots #1 through #9 had seen an increase in the Culver setting from 48.5 to 52.5 grains. After those 9 shots, all 9 cases measured 1.491 to 1.492.

Now, along comes shot #10 (53.0 grains), and after touching it off... that case length was 1.497. Hmmm! Shot #11 (re-firing case #1) (53.5 grains) also had its case grow to a length of 1.497. And shot #12 (54.0 grains), (re-firing case #2) had its case grow to a length of 1.498.

One has to note the sudden increase in case length on the 3 hottest shots... #10, 11, and 12!

Continued on next page

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GEZA NAGY CONTINUES HIS PPC TESTING

Continued

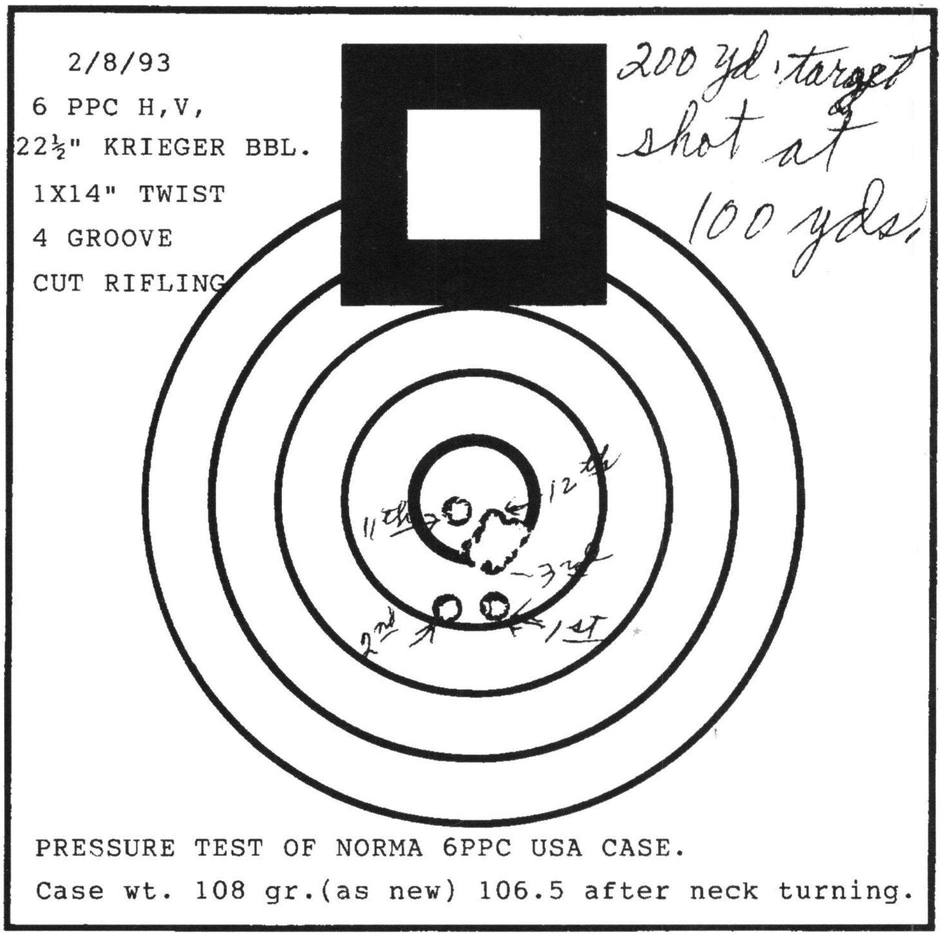
PART III

PRESSURE TESTING NORMA 6PPC USA CASES
3rd PREPRODUCTION LOT

Dr. Palmisano sent me twelve cases of this current lot that has all of the modifications that he asked for. The case capacity has been increased to be more than any other PPC case including the old original Sako 220 Russian.

The case weights were 107.6 to 108 grains, as received. Each case was 1 1/2 grains lighter after neck turning and trimming. They were 1.506 average in overall length as received. One case measured

Continued on page 22



2/8/93
6 PPC H,V,
22½" KRIEGER BBL.
1X14" TWIST
4 GROOVE
CUT RIFLING

200 yd. target shot at 100 yds.

PRESSURE TEST OF NORMA 6PPC USA CASE.
Case wt. 108 gr.(as new) 106.5 after neck turning.

Australian H322 lot #022592C 68 Euber FB lot #52
Fed 205M primers lot #3B1690

SHOT#	CULVER	GRAINS	VELOCITY	VEL. INCR.	HEAD	CASE OAL
1.	48.5	27.8	3116 FPS	---	.439	1.489
2.	49.0	28.1	3169 "	+53	.4391	1.489
3.	49.5	28.4	3202 "	+33	.4393	1.490
4.	50.0	28.7	3240 "	+38	.4393	1.492
5.	50.5	29.0	3272 "	+32	.4393	1.494
6.	51.0	29.3	3292 "	+20	.4395	1.495
7.	51.5	29.6	3327 "	+35	.4396	1.497
8.	52.0	29.9	3355 "	+28	.4396	1.499
9.	52.5	30.2	3394 "	+39	.4393	1.501
10.	53.0	30.5	3434 "	+38	.4396	1.505
11.	53.5	30.8	3463 "	+29	.4397	1.509
12.	54.0	31.1	3485 "	+25	.4399	1.513

Shot #12 was 369 FPS faster than #1
Average increase in velocity - 33.6 FPS
All shots chambered and extracted easy.

One additional shot 31.4 gr. 3505 FPS (different case)

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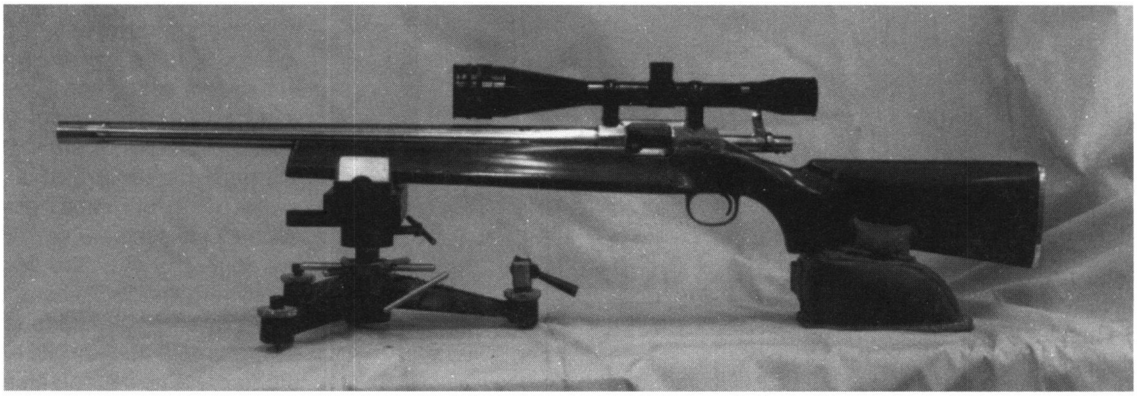

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- Removable Trigger Bracket
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GEZA NAGY CONTINUES HIS PPC TESTING

Continued

1.504" and two cases measured 1.507". This sample lot was very uniform in all respects. It is hardly likely that in actual production they would be that close.

I measured the case heads and rims. Eleven case heads were .4389 and one was .4387. The case rims measured between .4421 and .4428. They should chamber in all PPC chambers.

The cases have preformed shoulder angles to fit MINIMUM size chambers. Unlike the 220 Russian case, it is not necessary to full length resize to find the shoulder to neck turn to. I trimmed them to 1.490" o.a.l. and chamferred and deburred the necks. I merely greased the necks and ran them on an expander button to fit my neck turner mandrel. I neck turned them one time just touching the preformed shoulder. The shoulder length came out to be the exact length that I have my full length die set for.

The 220 Russian cases shorten on fire forming because the shoulder has to blow out to fit your chamber. These do not because the shoulder angle is already there. That is why I recommend them to be trimmed to 1.490, to have room for them to lengthen. You do not want to wedge the case neck between the bullet and the rifling ahead of your chamber. With moderate loads, the cases will not lengthen as much as with barn burner loads.

My test case lengthened from 1.487" to 1.513" after 13 shots that were mostly way above my normal load. I stopped the test with that case because I was afraid of wedging the case neck with the very high

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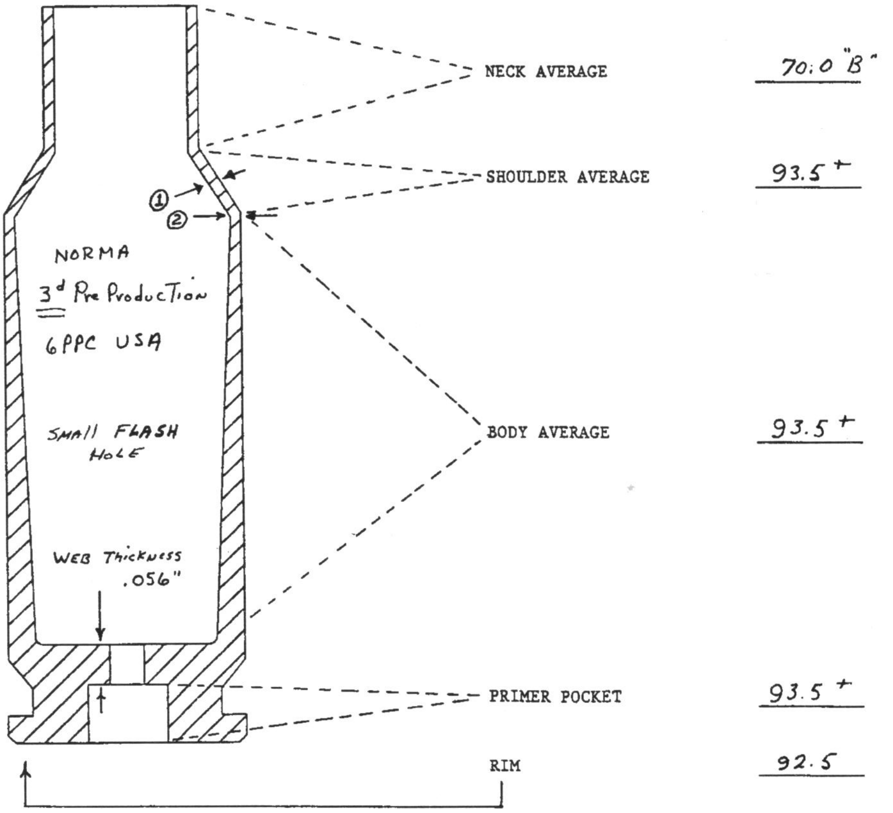
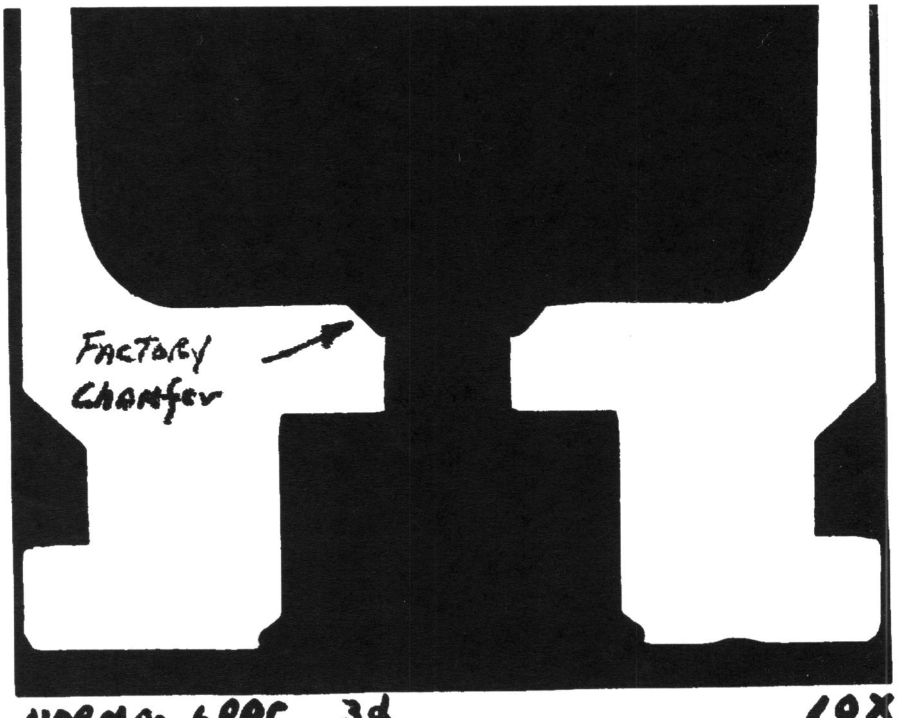


	SAKO RUSSIAN	LAPUA RUSSIAN	NORMA 6PPC USA
① Shoulder Thickness	.0131"	.0156"	.0145"
② Body-Shoulder Intersect.	.0164"	.0158"	.0139"



NORMA· 6PPC 3d 10X

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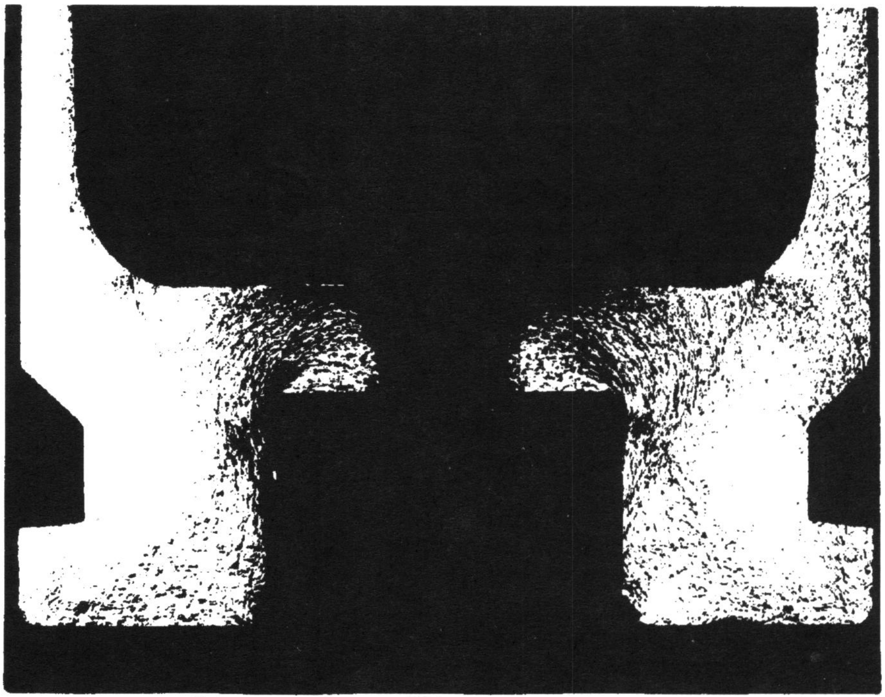
pressure loads. I reloaded a different case with a 54.5 Culver setting (31.4 grains) and reached a velocity of 3505 FPS. The powder level came flush to the top of the neck of that case with a two inch drop tube.

I had no difficulty in chambering or extraction during this test with the components that I used. I had cases that had to be pried out of my seating die because the seater was made to a smaller chamber. It shows up in the seater when the case heads swell a little.

After shot #8 I ran the case in Clarence Hammonds small base die to reduce the case web/head area. After that they came out of the seater alright.

Notice on the test results that the case lengths increased by .004 on each of the last 3 high pressure shots. They lengthened by smaller increments at the beginning of the tests.

It was a chilly morning of 42 to 47 degrees. The 10 to 15 MPH head winds made the wind chill worse. The barometer read 30.30" with the relative humidity of 60%. The Pro Tach chronograph was 10 ft. in front of the muzzle.



NORMA 6PPC 3d Etched 10X

WARNING!

This was a designed pressure test to check the strength of the case in a rifle that has previously proved capable of withstanding very high pressures. Under no circumstances should these powder charges be duplicated by weight or volume without working up a safe load from a lower starting point.

Gezy J. Nagy

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FACTS ABOUT HEARING PROTECTION

by

John Gammuto

Having recently done some research on the subject noise levels in the work place, I thought I'd dig a little deeper and see where the report of a rifle measures. I knew we were in for trouble when I discovered that the noise of a lawnmower bordered on OSHA's "Unsafe Level." After reading this, I hope you will take a good look at your own hearing protection equipment and make an informed value judgement.

The Society of American Engineers (SAE) recommends for establishing a test environment a large open area with no buildings or sound reflecting obstacles within a 100-foot radius of the sound generating device. Also, a trained technician capable of setting up, monitoring, and interpreting results in a controlled environment is critical to obtaining meaningful data. Lacking all of the above, I went to the library. It's amazing what you can come up with in just a few hours.

Before any of you write and tell me that Radio Shack sells a nifty little gadget called a Decibel Meter, let me tell you something. It doesn't do the job.

After reading all of the material available to me at the library, and several related government pamphlets, I knew my research had to be confined to the library. Even the simplest tests are extremely difficult to set up and validate.

I'm afraid that you're stuck with public domain level information, but that in itself makes for an interesting discussion. Interesting enough to make the average guy sit up and take notice, I believe.

COMPARATIVE SOUND LEVELS

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140	GUNSHOT
130	THRESHOLD OF PAIN
120	HEAVY METAL BAND
110	SANDBLASTER
100	UNSAFE LEVEL
90	LAWN MOWER
80	HAIR DRYER
70	VACUUM CLEANER
60	CONVERSATION
50	INSIDE QUIET CAR
40	QUIET ROOM
30	WHISPER
20	PIN DROPPING
10	EMPTY RECORDING STUDIO
0	HEARING THRESHOLD

JJG/92

TABLE A

Aside from cartridge considerations, the physical attributes of the range come into play when collecting data and assessing personal protection requirements. Covered firing lines clad with corrugated metal or plastic decking, asphalt-singled plywood, etc..., all considerably alter the mathematical solutions to the

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problem. Harmful noise levels are often altered and even magnified by sound-reflecting objects, and the physical design parameters of nearby structures. Land formations, foliage, and man-made berms also come into play.

As stated earlier, sound is recorded in decibels (dB), and is logarithmic in nature. 110 dB is ten times louder than 100 dB, and 100 times louder than 90 dB. Table A illustrates a biased collection of familiar sound for your reference.

As you might have imagined, an extremely loud sound can damage hearing immediately. A less intense sound can damage hearing just as severely, but will take longer to achieve the same result. The US Department of Labor requires work places to conform to certain standards to prevent workers' hearing damage (See Table B).

To an observer standing at a relatively safe distance, the report of a rifle may initially be perceived as a minor annoyance. Over an extended period of time the same person's comfort level may change and cause him to seek a more comfortable area. On the other hand, one person's noise may be inconsequential to another, it varies from one person to another. But it is interesting to note that you can cause permanent damage to your hearing without being aware of it.

Ranges built in once considered remote areas, on the outskirts of neighboring communities, now find themselves being confronted by annoyed and often angry homeowners. The errant shot, and early morning noise levels has lead to more than one confrontation.

The gift of hearing is a bounty. Just ask someone who has lost even part of his ability hear how he feels about it. Permanent hearing loss due to not taking fundamental precautions is inexcusable. No one defends this position more often than a company by the name of Silencio. Their business is hearing protection, and I believe they are the best.

Silencio is a consultant to the armed services of many nations around the world, our own being the most prominent. Aircraft carrier deck crews wear Silencio Rangesafe Earmuffs in areas where high noise levels where hearing damage would certainly occur.

Silencio makes at least 6 different standard earmuffs, and 3 ultra high grade electronic types to choose from. The electronic noise blocking varieties are pricey and somewhat clumsy on the line, but are worth every penny to those who value their hearing.

As you may already know, earmuffs are graded by their ability to filter out harmful noise levels. The Noise Reduction Rating (NRR) is what you should pay special attention to when comparison shopping. The higher the NRR rating the more protection.

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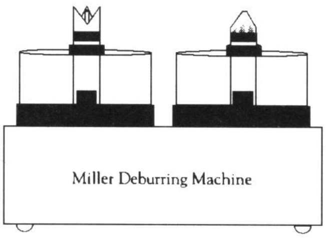

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AR-15s

by

Robert Beckham

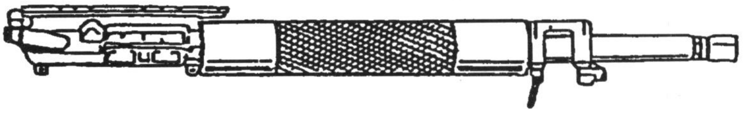
Dear Dave:

I have been following with interest Roy Baumgardner's saga of "Freefloating the Barrel on the AR-15 (and what went wrong along the way)." I'm not sure what went wrong, but I suspect the fault lay in the execution, rather than the idea, which is a good one.

Having put together an AR-15 a couple of years ago from little baggies of parts supplied by Quality Parts Co. of Windham, Maine (999 Roosevelt Trail, 04062), (phone 1-800-998-SWAT) using their "National Match" 24" heavy barrel, I was delighted with the accuracy of the rifle when I first took it to the range. With a 12x Leupold scope, it shot consistent 2" groups with cheap (Norinco) factory ammo and no tuning whatsoever. Other than breaking it in carefully (using the same methods we use with our bench guns) I have yet to really fiddle with the rifle to try to extract additional accuracy from it.

This was, that is, until I saw in a recent edition of the Quality Parts catalog a new and very interesting item: their "V Match" aluminum handguard, which free floats the barrel, attaching directly to the upper receiver, and replacing the standard handguards, barrel nut, and handguard cap, leaving the barrel free for its entire length. The rear part of the V Match screws onto the receiver just as the standard barrel nut does, and is drilled with holes to allow the gas tube to pass through. Though it may not be apparent

V Match Aluminum Handguards



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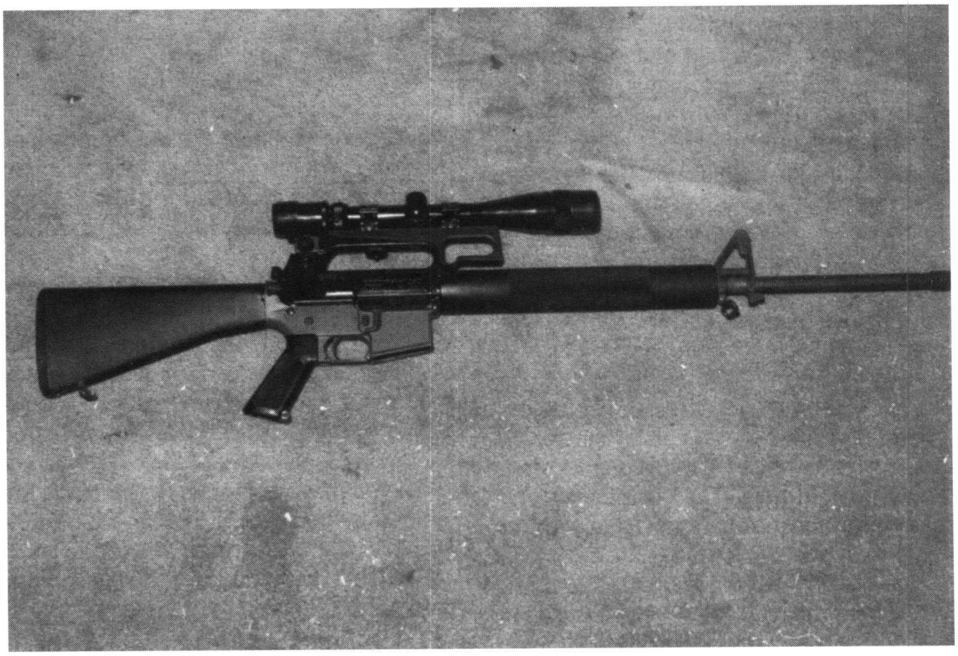

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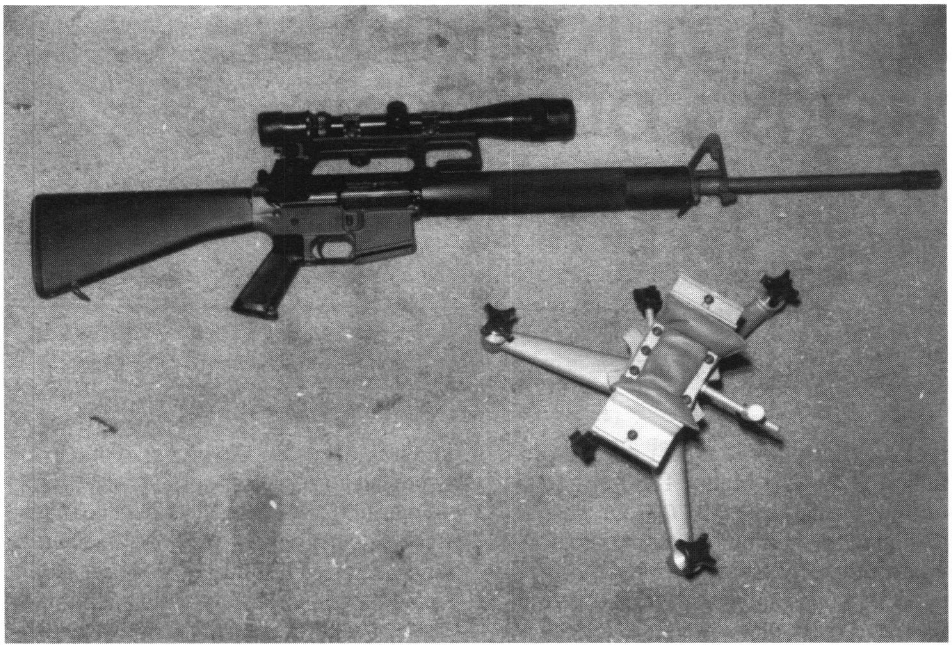

in the enclosed photographs, the V Match is a beautiful machined, well conceived and executed piece of hardware, supplied in anodized black.

The bottom line is that groups were cut in halt to 1" or better, still using throwaway Norinco ammunition and no further fiddling with the rifle itself. I should add that since I shoot this rifle from the bench, I do not use a sling, but clearly a sling could be attached to the V Match handguard, either with a swivel or with other, more elegant techniques. Dave, I don't know how many of your readers are excited about making "mouse guns" shoot well, but they could do worse than checking out this and other interesting Quality Parts items for these rifles.

An additional word on installation of the V Match. Since the handguard has no notches (nor clearance ahead of the nut), as does the original barrel nut, the standard barrel wrench cannot be used to torque the barrel to the receiver. The advice I got from the Quality Parts people was to use a strap or "bicycle chain" type pipe wrench to screw the handguard on. You will also need an armourer's action block, which holds the entire upper receiver, including the slight/carrying handle securely in a vise while tightening the handguard. When using a chain wrench, you will have to pad the handguard carefully to avoid marring the knurled finish. I was also told to torque the handguard somewhat tighter than the standard barrel nut, to 50-55 pounds of torque. This I had to do by feel, since I have not yet located a pipe-torque (torque-pipe?) wrench locally. Perhaps some of your readers can help?

Yours truly,
Robert W. Beckham
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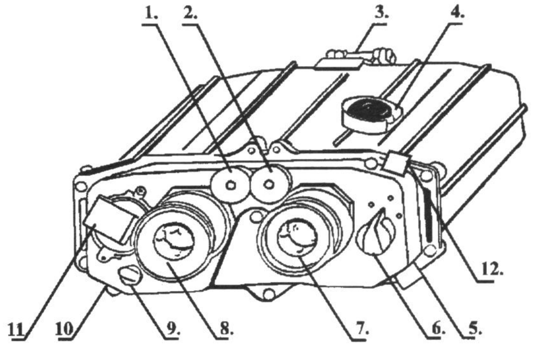

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TO CRIMP OR NOT TO CRIMP — NOW THAT IS A QUESTION!

(...And Some Related Tidbits)

by

Karl Bosselmann

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Achieving optimum accuracy levels from a given firearm is much an inexact science..... trial-and error propositions with bullets, primers, and cases are required that incorporate the individuality of the gun(s) involved. Barrel forcing cone dimensions and shape certainly play influential parts, and some exceptional performance levels can often be coaxed from a variety of configurations, from the more abrupt short-tapered to the long, gradual-tapered shapes, providing common sense and methodical experimenting is utilized. As most of us already know, powder selection also plays a very important part as does its position in the case when the cartridge is fired. (For static positioning, I personally prefer a slightly compressed charge which enhances consistent levels of accuracy, among other benefits* in both hunting and target category ammunition, even if use of a filler is required to achieve it).

In a recent ambitious step-by-step double illustration of this, I bought an early-production Marlin Model 1895S (straight stock configuration), and a middle-production Browning Model 1886 Grade 1, both lever actions in .45-70 Govt. caliber. I designed three chamber reamers otherwise precisely identical but with differing forcing cone angles — from abruptly-tapered to gradually-tapered. With a short list of various styles of barrel work I performed (lapping, stock bedding and removal, etc.), and firing done from a special rifle-type machine rest I designed and built expressly for this and for future in-depth experimenting, I was able to achieve a large number of sub-MOA 100-yard five and six-round groups. Extreme loads optimization included both jacketed and hard-cast lead alloy bullets in a variety of shapes and weights: but, perhaps more on this in the future.

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As most readers know, crimping of bullets — from very light (moderate) to heavy, or even no crimping at all — affects accuracy. Generally speaking, best levels of accuracy are usually obtained by not crimping-in bullets, but seating them out to chamber throat contact.

Upon discussing crimps with Editor Brennan, he suggested an article be written on this. I did want to do the piece, but in a caliber choice not much to his liking — .338 Winchester magnum. (The .338 WM is actually the smallest caliber I care to work with as I have a decided preference for the large bores. Consequently, upon noticing the following variations, please remember that, due to the more influential smaller-bore calibers, it should not be unexpected for the variations to be respectively more pronounced with them).

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Throughout the following investigations, which encompassed the firing of several hundred rounds, the rifle, a Ruger No. 1 Single Shot, was constantly monitored, especially the tension of the forearm takedown screw (Part #S-51). It did remain stable, much the reason due to my free-floating the forearm which was glass-bedded to the receiver extension (hanger). However, just before commencing this bullet crimping investigation, I dismantled the rifle's breech block assembly again (the previous time was after I'd fired about three hundred and fifty rounds through it — I had purchased it new) to inspect the internal parts for wear or burrs. By the time this crimp project began, I'd fired about seven hundred rounds through it, but I wanted to be certain that internal critical parts remained in top condition. While very minimal surface wear had occurred in some places, nothing so pronounced had occurred as had been the case with several of my other No. 1's during the same amount of firing. But, for the sake of best and most consistent primer ignition, I decided to replace the following with new parts:

- firing pin (Part #S-11).
- firing pin spring (Part #XR-48).
- hammer transfer block (Part #S-15).
- hammer transfer block pivot pin (Part #S-26).
- hammer spring (Part #S-18).

No hand fitting nor other special procedures were required for this parts substitution.

As with previously published experiments with this rifle, once-fired Remington brass was used. All cases were of random selection with no divisions as to variations in hardness, weight, capacity, neck concentricity, primer pocket nor flash hole dimensions. Trimming was to exactly 2.500" length, and then necks were chamfered.

---

* - Advisable for repeating rifles with high levels of recoil, most certainly larger-caliber tubular-magazine models.

Initial accuracy experimentation with this rifle incorporated ten different factory-produced loads. In alphabetical order they were:

Ammunition	Group Size, Average of Three 6-Round Groups When Possible.
- A-Square's Dead Tough 250-gr. Soft Point;	1 27/32"
- Federal's Premium SAFARI (Prod. #P338A2) 210-gr. Nosler Partition Bullet;	7/8"
- " Hi-Power (Prod. #338C) 225-gr. Soft Point;	1 1/16"
- " Premium (Prod. #P338B, now deleted) 250-gr. Nosler Partition Bullet;	1 3/8"
- " Premium SAFARI (Prod. #P338B2) 250-gr. Nosler Partition Bullet;	1 1/4"
- Remington's High Velocity (Prod. #R338W2) 250-gr. Pointed Soft Point;	11/16"
- Western's Super-X (Prod. #3382, now deleted) 250-gr. Silvertip;	1 13/16"
- Winchester's Super-X (Prod. #X3381) 200-gr. Power-Point;	1 9/16"
- " " " (Prod. #X3383) 225-gr. Soft Point;	1 5/16"
- " Super-Speed (Prod. #W3383, now deleted) 300-gr. Power-Point.	1 15/16"

- **RIFLE** — Ruger No. 1 Single Shot (Catalog #1-S), Serial #132-90528; .338 Winchester Magnum caliber; rear rifling constriction of barrel was manually lapped out, 1/10" twist, groove diameter .3389", 26" length.

Trigger assembly remained as-issue factory; forearm was free-floated to the barrel and glass-bedded to the receiver extension.

- **RELOADING DIES** — RCBS full-length die set; expander ball diameter for the once-fired Remington cases measured .335"; for the unfired Remington and Federal ammunition brass, the second expander ball measured .336".

- **AMMUNITION and/or RELOADING COMPONENTS** — as listed in below charts. Handloads used once-fired Rem. cases trimmed to 2.500'".

- **SCOPE** — Burris 12X Fullfield (Serial #66233) with Fine Plex reticle; Ruger 'High' rings (.435"), #S-100-RH.

- **TARGET DISTANCE** — 100-yards.

- **ELEVATION AND TEMPERATURE RANGE** — about 1600-ft: 70 to 88 degrees (F).

- **RATE OF FIRE** — rounds fired at an approximate rate of one per minute per group, with a 20-minute barrel cooling-off period between groups..... barrel was not allowed to completely cool after experiment segments had begun.

- **SPECIAL PROCEDURES** — Shooting was from a stable benchrest. The forward rifle support was a sandbag positioned at the junction of the extreme rear of the forearm/front (lip) of the receiver. Aft support was another sandbag but at the toe area of the buttstock.

Barrel was cleaned after every 5-round group — ten push-pull through-strokes with Hoppe's No. 9 and a bronze brush, wait three minutes, then repeat; wipe dry with numerous passes using two new cotton patches. Following that, one fouling round (of the exact ammunition type to fire the next group) was fired preceeding that group.

Continued on next page

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Continued

EXPERIMENT #1

As shown above, the most accurate factory ammunition in this rifle of my chosen selection was Remington's #R338W2. I bought three more boxes of this in the same Lot No. K 04C B3623 for the below investigations:

Cartridge Loading	Type of Crimp	Data (250-gr. P.S.P.)	Group Size, Average of Three 5-Round Groups
Factory Remington	Factory	As-issued factory loading.	3/4" **
Altered Remington Factory	None	Cases were full-length resized (.336" expander ball) after projectiles were removed via an inertia puller; case mouths slightly chamfered; Remington powder charges and primers retained; C.O.L. static.	2 1/16" *
Same	Heavy-roll	Same as above.	1" *

* - Group size enlarged from factory ammunition results. (Impact centers also moved - about 3/8" left and about 5/16" up).

** - Group sizes slightly enlarged over this first fired with this rifle months previously; roughly five hundred rounds of jacketed, full-power ammunition passed through this rifle between these two targetings, thus losing a slight bit of accuracy perhaps due to barrel throat erosion. (The investigations featured in this article are not presented in chronological order).

Here's an interesting discovery.

After pulling the bullets from the first box of factory ammunition, I weighed the powder charges in twelve of the cases and obtained the following different readings:

70.2-grains
70.3-grains
70.5-grains
70.9-grains
71.4 grains

The extreme variation was a surprisingly large 1.2-grains of a propellant resembling IMR #4831.

EXPERIMENT #2

Federal's Premium SAFARI #P338A2 ammunition with its lighter weight 210-grain Nosler Partition Bullet shot quite well out of this rifle, originally producing a three-group average, 6-rounds-per-group, C-C cluster of 7/8". Two more boxes of the same lot number (#0400051486) produced the surprisingly close variations below:

Cartridge Loading	Type of Crimp	Data (210-gr. N.P.B.)	Group Size, Average of Three 5-Round Groups
Factory Federal	Factory	As-issued factory loading.	7/8" (6-rounds, this group)
Altered Federal Factory	None	Cases were full-length resized (.336" expander ball) after projectiles were removed via an inertia puller; case mouths slightly chamfered; Federal powder charges and primers retained; C.O.L. static.	31/32"
Same	Heavy-roll	Same as above.	55/64"

EXPERIMENT #3

This begins the investigations with handloads. I decided to start with Speer's 250-gr. Grand Slam bullet (cannelured), a fine premium-grade hunting projectile. In previous work with it and using this rifle, a non-optimized load producing fair accuracy was:

Bullet information	Powder and type, charge and primer	Crimp	Average, three 5-round groups, 100-yds.
250-grain Speer Grand Slam (Product No. 2408), handload.	69-grs. IMR #4350; CCI #200 LR primer.	Medium-roll	1 19/32"

Months later I continued with this bullet, experimenting included another powder, primer, and a variety of crimps. Here is a loads sampling. . . . .

Same	Same	Medium-roll	1 5/32"*
Same	Same	None	2 21/32"
Same	Same	Heavy-roll	1 15/32"
Same Sam	67.0-grs. IMR #4350; CCI #200 LR primer.	None - bullet seated out to throat contact (.015" compression into case when closing action).	13/16"
Same	68.0-grs. IMR #4350; CCI #250 Mag. primer.	Medium-roll	1 15/16"
Same	70.0-grs. IMR #4831; CCI #250 Mag. primer.	Same	1 3/4"
Same	Same	Lee Factory Crimp Die set to maximum.	1 1/2"
Same	70.5-grs. IMR #4831; CCI #200 LR primer.	Medium-roll	7/8"
Same	71.0-grs. IMR #4831; CCI #200 LR primer.	Same	11/16"
Same	Same	None	2 11/32"
Same	71.5-grs. IMR #4831; CCI #200 LR primer.	Medium-roll	2"

Mean temperature, 80-degrees (F). -

* - When originally firing this exact loading months previously, the average group size ran 1 19/32" C-C. However, between that initial group and this first one in this latter stage of investigations, over three hundred more jacketed bullet rounds had been fired through the rifle, thus the condition of the factory's rough rifling was improved through a 'natural' lapping process.

Continued on next page

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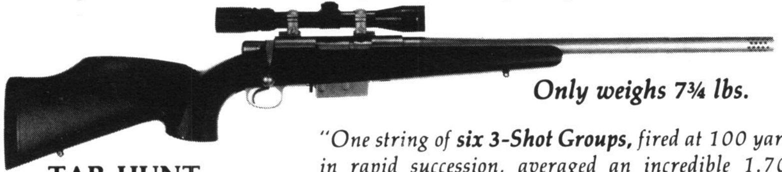

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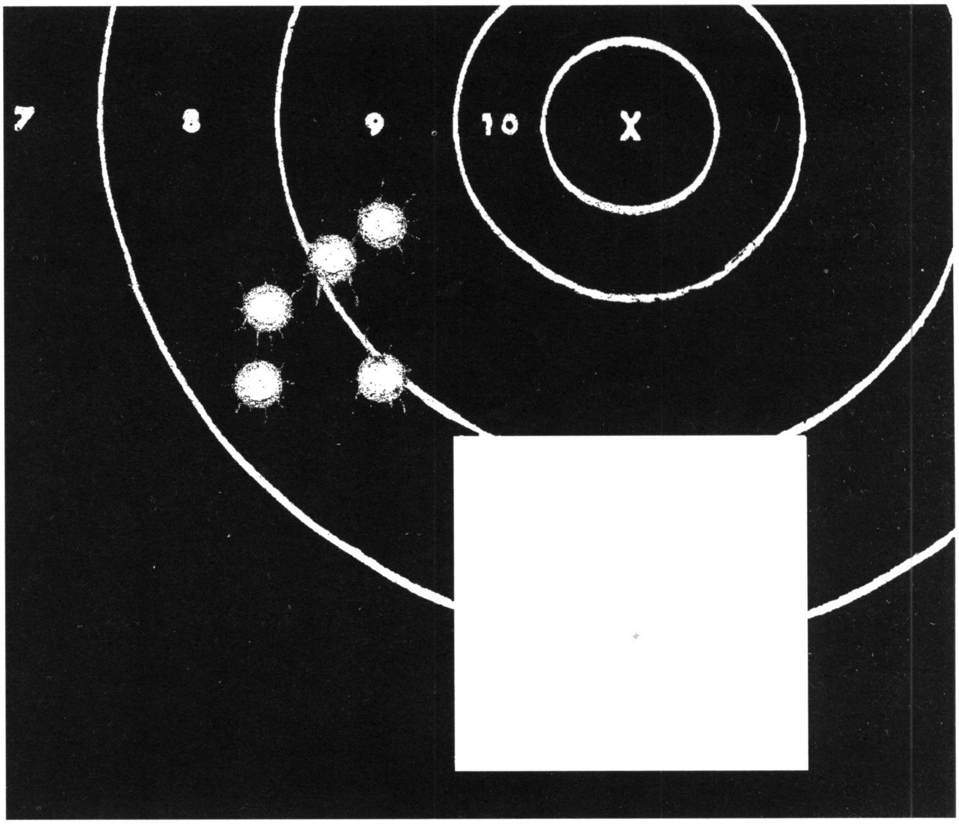

For the record, just a brief mention concerning Hornady's 250-gr. RNSP big game hunting bullet (Product #3330). The handload this rifle prefers for it using Remington brass is:

68.0-grs. IMR #4350 powder
CCI #250 Magnum primer
Heavy-roll crimp
5-rounds, 100-yards
1 3/16" C-C (pictured above) — an average of three 5-round groups).

An identical loading, but with a medium-roll crimp, produced an average group 1/4" larger in size.

Continued on next page

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W. Clint McKee, President

EXPERIMENT #4

Of all the handloads I investigated, the most consistently accurate performer with this rifle used Sierra's Spitzer Boat Tail 250-gr. bullet (Product #2600)...... the first item below listing.

Cartridge Loading	Type of Crimp	Data	Average, three 5-round groups, 100-yds.
Handload, utilizing Sierra's SBT, 250-gr. bullet. (Product #2600).	None	70.0-grs. IMR #4831; CCI #200 Standard LR primer; once-fired, full-length resized Rem. cases trimmed to 2.500", mouths slightly chamfered. Bullet seated out to chamber throat contact (.020" compression into case upon closing the action).	11/16" (6-rounds, this group) THE BEST LOAD!
"	None	Same as above but with CCI #250-Magnum primer.	1 23/32" (6-rds.).
"	None	A change back to the CCI #200 Standard primer and a duplication of the load data, but with the difference that bullets were seated more deeply into the cases to allow a 3/32" (.093") jump to chamber throat. (Adding one more grain of powder reduced this group size shown by 1/8").	1 5/32"
"	Lee Factory Crimp Die set at 50% of maximum.	Same	1 3/32"
"	Same but set at 75% of maximum.	Same	1 1/64"
"	Same but set to maximum.	Same	29/32"
"	None	Back to first loading at top of page. With a smooth-jawed set of pliers, I bent the lead bullet noses to the side so tips would be 3/64" off-axis.	2 15/16"

- (Mean temperature, 76-degrees (F). -

In conclusion, with my rifle and above investigations, preferable is bullet/chamber throat contact followed by medium to hard crimps. HOWEVER, what has worked for me here isn't necessarily that which is required by you and your firearm(s).

There is a chance that my above results will markedly differ from those you achieve since the rifling was flawed — this firearm is a distinct individual! (Rifling was described in a previous article of mine entitled, "Accuracy - Clean vs. Fouled Bore," in the March, 1992 issue of PRECISION SHOOTING Magazine (37 Burnham St., East Hartford, Connecticut, 06108, U.S.A.). Repeatedly shown is the fact that what works for one loading doesn't always work for another.

On the final day of bench shooting the following results, I fired 108 rounds. Upon dismantling the rifle for thorough cleaning of the action, what normally happens with unaltered No. 1's after such a quantity of ammunition has been steadily expended, did — the ejector strut, ejector strut swivel, and ejector strut spring (respective Parts #'s S-46, S-47, and S-48) fell out onto the ground upon removal of the forearm. This is due to in-use loosening of the ejector strut adjustment screw (Part #S-49). A small custom-made lock nut can be installed on the adjustment screw to preclude this part from working loose. (I don't care at all for the application of Loc-Tite or other similar product on serious-use firearms). Additionally, the lever pivot screw (Part #S-44), which I'd solidly tightened into position at the beginning of this crimp investigation, worked loose about two full threads.

Continued on next page

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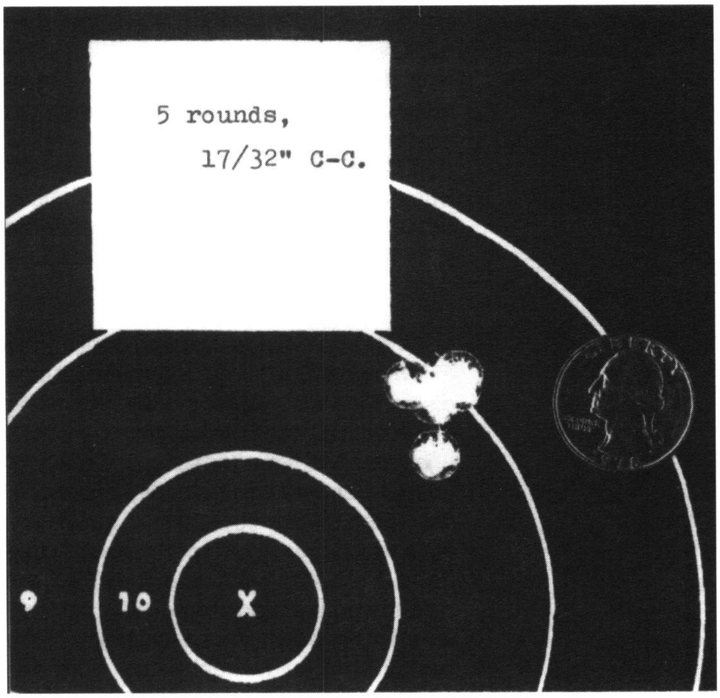
TO CRIMP OR NOT TO CRIMP

Continued

Here are some of the better groups fired using Sierra's 250-grain SBT bullet handloaded as described above. These 100-yard results aren't bad from a flawed, factory-production barrel.



5 rounds,
17/32" C-C.

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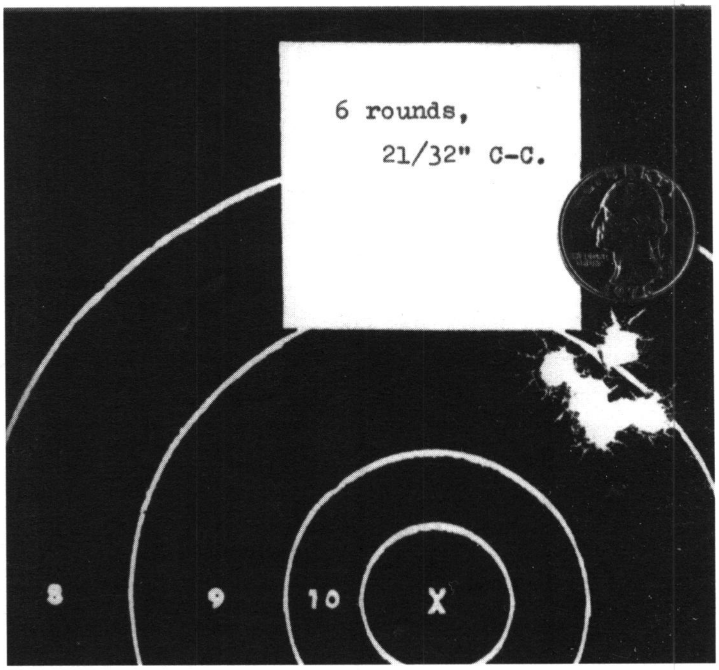
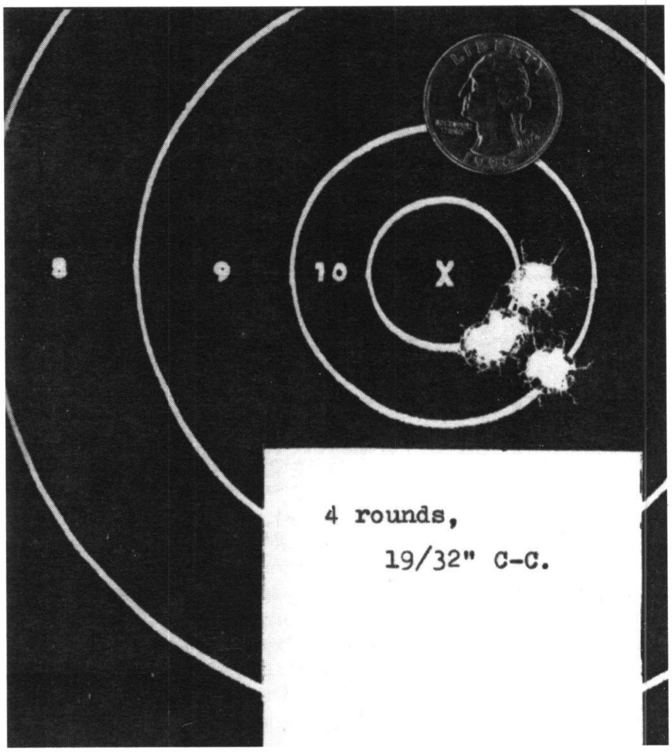


6 rounds,
21/32" C-C.



4 rounds,
19/32" C-C.

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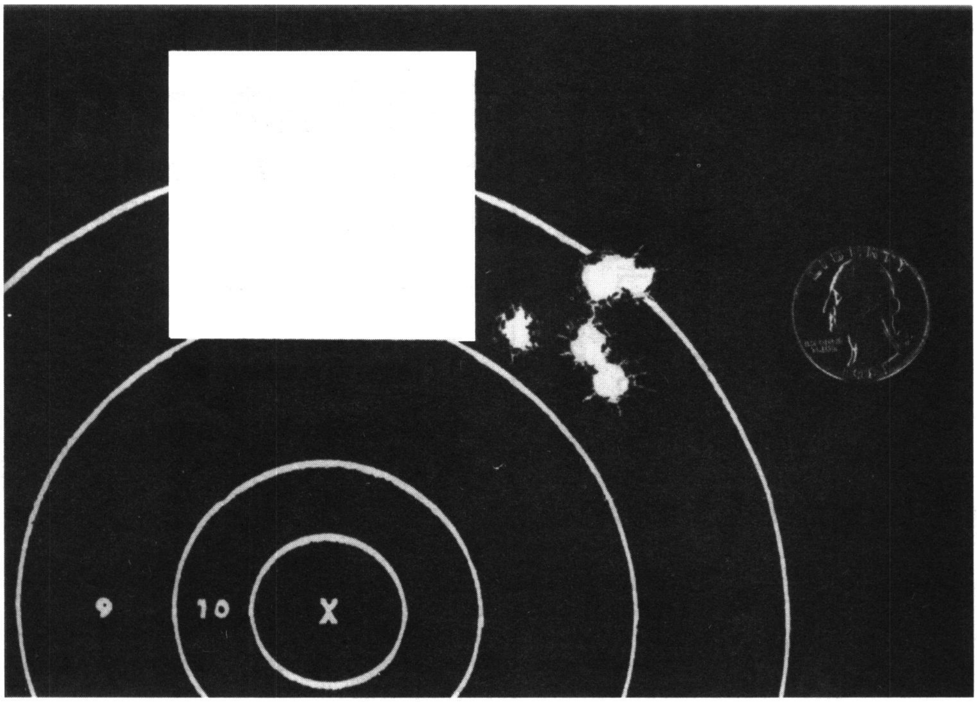
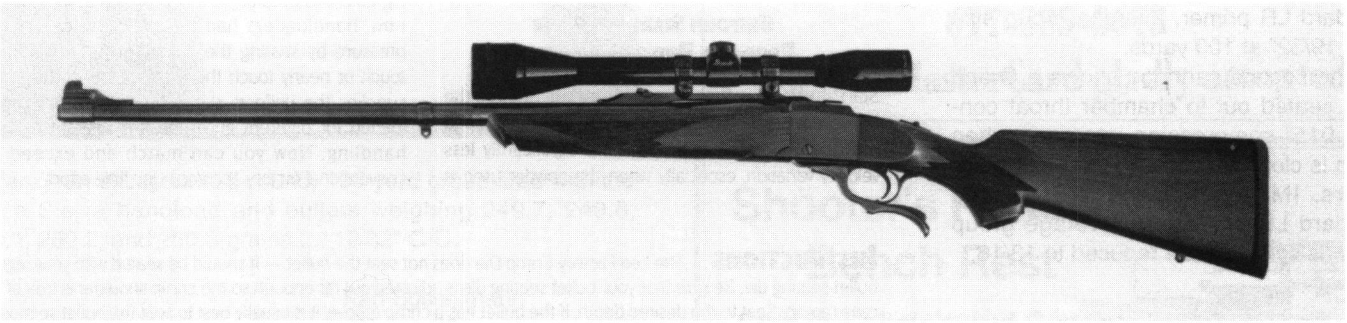


A 100-yard, 5-round group produced by Federal's Premium SAFARI (Prod. #P338A2) with the 210-gr. Nosler Partition Bullet - 7/8" C-C.



The .338 Winchester magnum-caliber Ruger No. 1 Single-Shot Rifle with Burris 12X Fullfield scope as was used for this article.

Continued on next page

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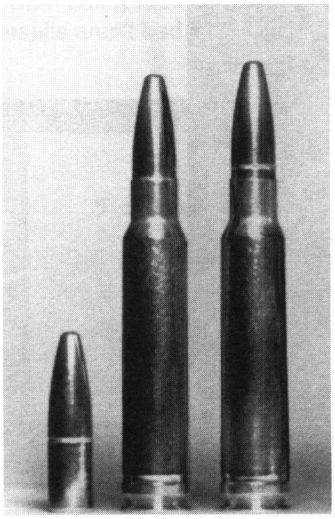
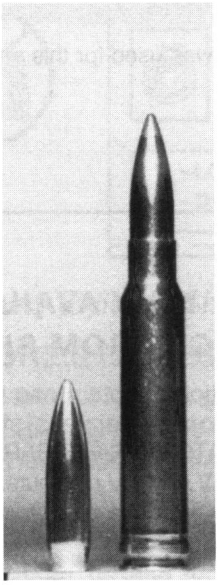


At left, the Speer 250-gr. Grand Slam bullet (Product #2408).....

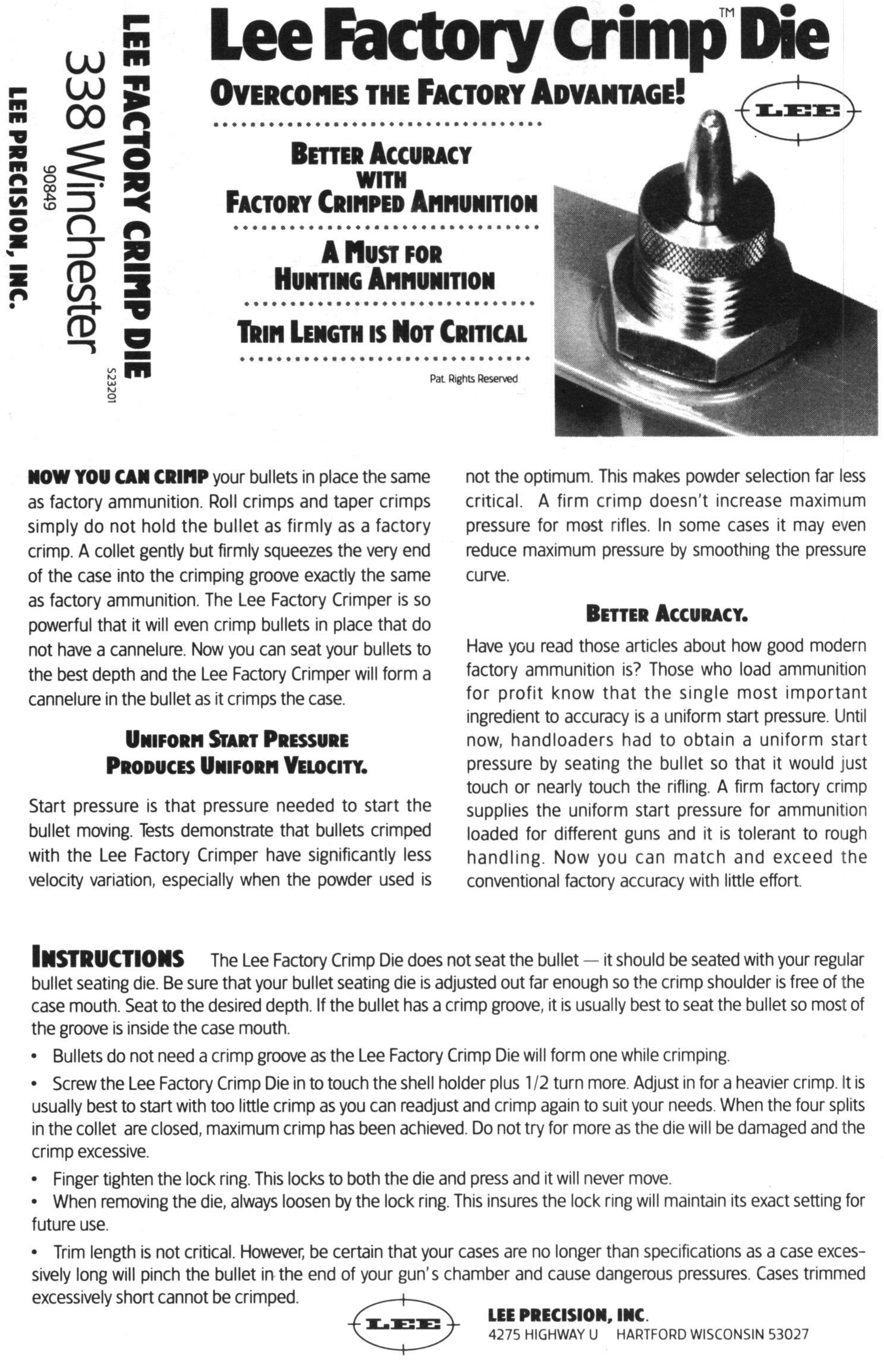
- first cartridge shows it seated to cannelure and medium-roll crimped. In front of 69-grs. IMR #4350 and a CCI #200 Standard LR primer, average group size ran 1 19/32" at 100 yards.

- The second cartridge shows a Grand Slam seated out to chamber throat contact, .015" compression into case when action is closed. With a powder charge of 67-grs. IMR #4350 and a CCI #200 Standard LR primer, the average group size was considerably reduced to 13/16".



At left, Sierra's uncannelured .338-caliber, 250-gr. Spitzer Boat Tail bullet (Product #2600).....

- cartridge shows it seated out to chamber throat contact, .020" compression into case when action is closed. (No crimp



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UNIFORM START PRESSURE PRODUCES UNIFORM VELOCITY.

Start pressure is that pressure needed to start the bullet moving. Tests demonstrate that bullets crimped with the Lee Factory Crimper have significantly less velocity variation, especially when the powder used is not the optimum. This makes powder selection far less critical. A firm crimp doesn't increase maximum pressure for most rifles. In some cases it may even reduce maximum pressure by smoothing the pressure curve.

BETTER ACCURACY.

Have you read those articles about how good modern factory ammunition is? Those who load ammunition for profit know that the single most important ingredient to accuracy is a uniform start pressure. Until now, handloaders had to obtain a uniform start pressure by seating the bullet so that it would just touch or nearly touch the rifling. A firm factory crimp supplies the uniform start pressure for ammunition loaded for different guns and it is tolerant to rough handling. Now you can match and exceed the conventional factory accuracy with little effort.

INSTRUCTIONS The Lee Factory Crimp Die does not seat the bullet — it should be seated with your regular bullet seating die. Be sure that your bullet seating die is adjusted out far enough so the crimp shoulder is free of the case mouth. Seat to the desired depth. If the bullet has a crimp groove, it is usually best to seat the bullet so most of the groove is inside the case mouth.

- Bullets do not need a crimp groove as the Lee Factory Crimp Die will form one while crimping.
- Screw the Lee Factory Crimp Die in to touch the shell holder plus 1/2 turn more. Adjust in for a heavier crimp. It is usually best to start with too little crimp as you can readjust and crimp again to suit your needs. When the four splits in the collet are closed, maximum crimp has been achieved. Do not try for more as the die will be damaged and the crimp excessive.
- Finger tighten the lock ring. This locks to both the die and press and it will never move.
- When removing the die, always loosen by the lock ring. This insures the lock ring will maintain its exact setting for future use.
- Trim length is not critical. However, be certain that your cases are no longer than specifications as a case excessively long will pinch the bullet in the end of your gun's chamber and cause dangerous pressures. Cases trimmed excessively short cannot be crimped.

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(Illustration courtesy of Lee Precision, Inc. brochure).

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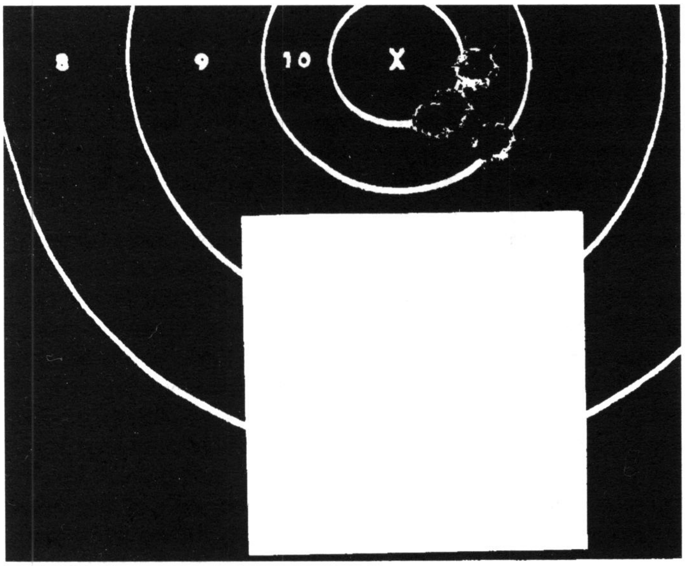
During the course of this undertaking, I carefully weighed two hundred of the Sierra SBT 250-gr. bullets, the boxes being from three different lot numbers. Weight consistency was excellent for this larger caliber, and ran from 249.7 to 250.3-grs.

applied).



Here's an exceptional 5-round, 100-yard group fired with the prime Sierra handload and bullets weighing 249.7, 249.8, 250.1, 250.2, and 250.3-grains..... 19/32" C-C.

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"Meanest Game On The Continent"

'What's so tough about the target-shooting game called, BR-50? Alot!

by

Lee McFarland

BR-50. It stands for, bench rest — 50 shots, and a whole lot more. This brilliantly challenging little 'game', has since its inception generated more interest among serious accuracy shooters than its inventor could ever have dreamed. BR-50 has grown up! Evolving from a one-club game, into an international accuracy shooting sport — it is complete with State, Regional, and National matches; individual club and national championships; an official national ranking system of top shooters; and a fever of devoted following by some of the sharpest eyes and meanest trigger fingers in the arena of target-shooting, today. So just what's so tough about this little 'game' — that it successfully challenges (and even humbles) some of the biggest names in accuracy shooting?

Well, first consider this: BR-50 is shot bench-rest style by airguns at twenty-five yards, or .22 rimfires at fifty yards. As most of us already know, different ammo can shoot differently, in different rifles. This is particularly true of .22 rimfire. So the first requirement is finding a good rifle/scope combination — and then, doing alot of test firing to determine what brand and type ammo shoots best from yours, consistently. Once you've figured that out; consider that this 'devilish' BR-50 sport is shot nearly year 'round, in all kinds of weather, at ranges all across the U.S. from California to New York (as well as in several other countries). Depending on which range you're at, and what time of year — you now have to figure out if certain lot numbers of your chosen ammo will perform better than others, in the bitter cold of an Indiana winter — in the sweltering heat of a mid-summer Texas day; and so on.

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Next, consider the target itself — and how it's scored. Each official BR-50 target sheet (they're printed in special green ink) contains fifty — count 'em, fifty — individual bulls-eyes. These are divided into ten equal grids of five 'bulls' each. At the top of each full target sheet, is a handy sighter target. The little bulls-eyes each measure just slightly larger than a twenty-five cent piece. The center area of each bull (known as the 'mothball') measures considerably less than the size of a dime. In fact, it's only about half the size of a dime. A shot placed in this center 'mothball' is worth one hundred points. A shot that breaks into the next ring out (which is precisely the size of a dime), is scored at fifty points. A shot that hits outside that, but doesn't break the outer ring of the bull, gains you twenty-five points. Any shot that does break across the outer ring of the bull, drops the score to ten points. Now, here's where it begins to get tough. Any shot that hits completely outside the bull, is given a penalty score of minus 25 points!

Basically, the game of BR-50 is played like this: You can shoot as many "practice" rounds as you like, into the area of the sighter target at the top of your sheet during the match. When shooting for score, however, one and only one shot is fired at each individual bull. After each shot — you move to the next bull, reload, and fire again. If they all went dead in the center, of course — you would have a perfect 'possible' score of five thousand points. That has never happened. Now, for the second tough point. In the official rules of BR-50, rule #10 requires 'worst-edge' scoring. In other words, if a shot hits in the 100 point area, but any edge of the bullet hole breaks completely through the green ring of that area, the score drops to fifty points! Then there's rule #10A. It says, if a shot falls too close on the line to tell if it breaks the ring or not — it automatically receives the lower score. So, if you can't clearly see that the shot is 'in' — it's considered 'out', and is scored that way.

Once a match begins, most competitors start shooting at the first bull in the upper left-hand corner of grid #1 and continue across the top row, firing one shot at each, and so on. If there is any wind of course, you either compensate for it, or wait it out — making that decision as best you can, with each successive shot. When the match is completed, you've fired fifty shots — one each, at fifty different bulls — hopefully hitting more 'hundreds' than not. Now, for the third tough point. All official BR-50 matches are timed events. Once the match starts, you have thirty minutes to complete the shooting of your target. That's right! Fifty shots, at fifty separate bulls, from a distance of fifty yards (rimfire) — in only thirty minutes! Starting to sound tougher all the time — isn't it !?!

As they say, "You ain't heard nothin' yet". It gets worse. Let's suppose you don't quite finish shooting your target sheet before time runs out!? Well now; rule #9 states that any bulls you don't shoot, thus leaving them blank — are scored minus 25 points each! And it gets tougher yet when you encounter rule #11. Let's say you forget where you are on your target during a match. Absent-mindedly, you fire two shots into the same bull. Guess what!? Rule #11 says you just lost another fifty points! God forbid that you should really screw up and fire fifty-four or fifty-five shots into the gridded area of your target sheet. If you haven't scored lots of 'hundreds' you could end up a negative point total!.

And now, for the good news. The sport of BR-50 is a helluva lot of fun. It was also designed to be relatively inexpensive to participate in — and in most cases, it is that, too. If you live anywhere near one of the ranges currently holding BR-50 matches, and you own or have access to an airgun or .22 rimfire rifle with a scope; you can drive to the range, shoot up a box of ammo in practice and one in the match, pay your entry fee (they vary from club to club), and have a great time and learning experience with some of the friendliest guys (and gals) in the sport — all, for less than it would cost you to take your wife and in-laws out to dinner at the local Ritz.

On the other hand, if you have a little more money to spend, and want to improve your chances of shooting some competitive scores (assuming you can shoot) — you can pick up a decent medium-priced target or bench-rest model rifle; top it off with a good 12 power, 24 power, or 36 power scope; purchase an adjustable front rest and rear sandbag; stock up on a few boxes of match grade ammo — and you're ready to seriously compete for the national championship.

All officially sanctioned BR-50 matches at each club, reward the top ten scores with "champoints" — with ten points given to first place, down to one champoint for tenth place finishes. These champoints put you in contention for the individual club championships, and put you on the road to being ranked nationally among the many fine shooters of BR-50. Yours truly, has had the good fortune of being ranked among the top half in the national standings — although I've been at it less than a year and still have a great deal to learn about this kind of shooting.

Being relatively easy to get started at, and as much challenging fun as it is — BR-50 should not be taken lightly among the shooting competitions that exist today. Each match is held under some very safe and disciplined practices; guided by specific rules set forth by BR-50 International; and the targets, subjected to some rather precise scoring procedures. In other words, this isn't some weekend turkey shoot. So, if you've read this far, and begun to entertain the idea that — you'll locate the nearest club with a BR-50 schedule — snatch up your average .22 squirrel rifle with the low power scope — rush over there next Sunday, and proceed to impress everyone — then be prepared to be humbled! Maybe even embarrassed?! For one thing, you can't even see the bullet-hole a .22 makes in a BR-50 target, at fifty yards — with anything much less than a 10 power scope. And, some of the match grade .22 ammo used widely at these matches, is in high demand, and can retail for up to eight bucks — for a box of 50. And it does make a difference what you shoot.

The best way to introduce yourself to this challenging sport, is to attend a registered match at the range closest to you, that is currently competing in BR-50. You can watch a match in progress; see how it's shot and how it's scored — then, talk to some of the current shooters, and get a feel for whether you'd like to try it yourself. Also, you can contact BR-50 inventor, and competition coordinator, Larry Brown in San Diego, and for a small money order, get on the mailing list for BR-50's monthly report, known as the 'Hot Sheet'. Published in it, are the last 30 days match results from each club — including 'top-ten' shooters' scores; type rifle used; what scope; as well as what ammo was used. The 'Hot Sheet' also updates BR-50's National Ranking each month, naming the top 100+ competitors and their 'performance factors'.

Once you become familiar with BR-50, you owe it to yourself to try it firsthand. You'll not only become addicted to the challenge of the target — but you'll soon understand why they call it, "meanest game on the continent".

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RE-THINKING NECK CLEARANCE

by
Dave Scott

Ah, those nagging little problems that make the life of an accuracy fanatic a living hell. Through the years, I've agonized over the horrors encountered by mah fellow shooters–horrors vividly documented in my tear-stained issues of Precision Shooting.

Topics that leap to mind include the Dreaded Donut, lyin' wind flags, barrel vibration nodes, stock post-curing, the neck-tension dilemma, The Editor's threatened resignation, absurd predictions of .220 Russian case shortages, the Houston Warehouse revelations, Blue Goop pitting, hummer barrels, bullet runout, case wall runout, loaded bullet runout and – most perplexing and emotionally charged of all – the treat Bernoulli Effect squabble.

I confess to bouncing from one searing controversy to another. And because my own pathetic experiences often paralleled those I encountered in Precision Shooting, for years my existence was as it was meant to be for group shooters and underpaid Dutch painters: tortured.

Then one sleepless night, while alternating between slapping a defenseless McMillan stock forearm and wringing my bruised hands over the hotly disputed .220 Russian web design, I saw something in Precision Shooting that changed my life forever. Dave Beisner, writing in the April 1989 issue of PS, described forming .308 Win. cases into "thick-neck" 22/250 cases. Using this technique, Dave managed to come up with neck-turned cases that, when loaded, measured about .004 under chamber dimensions at the neck area of his standard-chambered rifle – or .002 to a side. He had, in essence, turned a factory chamber into a tight-neck chamber, simply by manipulating his cases. He enthusiastically reported that this one step was the biggest single factor in improving the accuracy of his 22/250. Until then, his rifle was plagued by inconsistent accuracy.

Tell me about it, Dave! Inconsistent accuracy robbed me of my youth and turned me into a cynical, embittered specimen of inhumanity. My formative years were scared by inconsistent .222's, .220 Swifts, 22/250's, .225's, you name it.

But by golly, I had an inconsistent 22/250 on hand, and I wasn't going to take it any more. This rifle wasn't exactly run-of-the-mill. The Remington Model 600 action had been locking-lug lapped for good contact, but was otherwise unaltered, except for a Model 700 bolt handle. The Douglas barrel, turned to a Shilen #5 1/2 contour, had been fitted by Garland Gilbreath of Triple G Gunsmithing in Stephenville, Texas. Garland had wanted to cut a tight-neck chamber, but since I planned eventually to sell the rifle, he reluctantly agreed to more generous chamber dimensions. Now, when Garland does a barrel job, I know that baby's going to be right. With a background in benchrest shooting and benchrest gunsmithing, including several years at the Shilen shop, Garland has a full grasp of what goes into an accurate rifle. So my 22/250, while chambered to approximate factory dimensions, was true and square. The barrel threads were cut slightly loose, and Garland put a target crown at the loud end.

This rifle had been given every conceivable chance to shoot well, but it would not with any consistency. Five-shot, 100-yard groups with bad flyers sometimes measured into the .8's. Rare groups with no flyers were in the .3's. The average was in the .6 to .7 range. All this from a rifle painstakingly glued into a McMillan Winchester Marksman fiberglass stock, with lots of clearance between the forearm and the free-floating barrel. The scopes (I experimented with two Leupolds) were epoxy bedded into the rings. The rings were epoxied to the base, and the base was epoxied to the receiver (in addition to screws). The gun usually was fired under good conditions, with two to four wind flags to help me gauge conditions. Berger bullets, H414 powder and Federal Magnum primers (my most accurate combo) were loaded into selected 22/250 PMC cases carefully neck-turned with a Sinclair tool. I even used a scope tube to deflect barrel mirage. In short, no turn was left unstoned.

But most significantly, loaded PMS 22/250 cases, neck-turned so they just cleaned up, measured a yawning .010 less than chamber neck diameter (.005 on all sides). Way too much, if Dave's contentions were valid. So, I ran some .308 cases through my dies and came up with cases that, when neck-turned and loaded, miked about .003 under my chamber neck dimensions. Mindful that the powder capacity of cases such as

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these can be significantly changed, I worked up a load at the bench. And my best efforts were met with dismal accuracy. But I was sure I knew why.

While turning necks, I had noted that the case resizing operation created a tight ring at the juncture of the shoulder and neck, and the constriction was tending to seize the mandrel. I figured the problem had compromised the accuracy of this critical step. A Wilson inside neck reamer cleaned out this bulge in some new, swaged .308 cases, creating an excellent fit on the mandrel. Necks were then turned without difficulty, and careful miking of loaded rounds confirmed that the neck thickness was indeed uniform.

Similar to Dave Beisner's experiences, I saw this gun come alive. The flyers weren't flying so far, and there were fewer of them. The change was remarkable. Then the thought hit me: what if I went still further in decreasing neck clearance? Would more of a good thing be too much? So I ran some 30/06 PMC brass through my dies and came up with still thicker brass, miking a little less than .001 under chamber dimensions when loaded. Almost predictably, the rifle shot even more consistently.

This led me into re-thinking this business of neck clearance, and resulted in a theory I'd like to open for discussion. I've owned tight-neck rifles since 1980, and even in those, my routine was to turn necks so loaded rounds measured a couple of thousandths under chamber diameter, then minimally size the necks just enough so the bullets were firmly gripped. I was advised to do this in the beginning, and I never questioned this advice until I began experimenting with the 22/250. Even my 6PPC Light Varmint class rifle suffered an aggravating degree of inconsistency with necks mindlessly turned to a "safe" clearance of .002, or .001 to a side.

Now, I have come to believe that if a serious accuracy fanatic wants to get the last bit of accuracy from a rifle, and he has exhausted every possibility, and the gun still doesn't perform up to expectations, the answer lies in the neck. Dave Beisner, who was inspired and instructed by Bob Pease's writings, came to the same conclusion.

So did T.J. Jackson, writing in the October 1985 issue of Precision Shooting. T.J., whom The Editor described as one of the more enduring legends of benchrest, was at that time shooting in the Houston Warehouse. For those of you who missed his illuminating article, The Houston Warehouse was this huge structure in Houston, Texas, where the conditions were often perfect. No wind, no mirage, no excuses, no nothing. T.J.'s article – named amid a flurry of opinion about the influence of case-wall thickness variations – dismissed the rear wall area of the case as not being an important consideration of accuracy. He underscored his contention that "only a gun with perfect necked cases will shoot in the zeroes."

For those of us who have never actually seen a group "in the zeroes" (we're speaking here of five shots at 100 yards or meters), it is an awesome sight. To corroborate his findings, T.J. included two groups with the article. One group was shot with five 6BR rounds exhibiting the most case-wall runout he could find among his cases, the other with cases having the least runout. The two CONSECUTIVE groups were identical and "in the zeroes".

Although I read and re-read this article, there was something T.J. casually dropped in there that escaped me for years. In describing the elaborate steps he pursued to produce perfect necks, he spoke of turning necks so close to chamber neck diameter they would only chamber with resistance for the first fire-forming. he then explained that the first neck

Continued on next page

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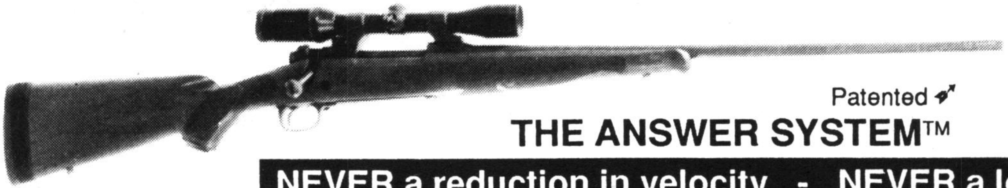

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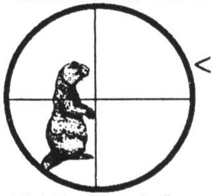
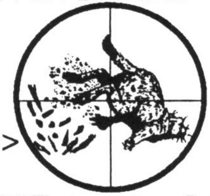


Dial him in and allow for the wind.



WOW! That was close; But the wind is a tad more than I thought.

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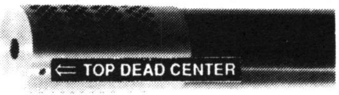

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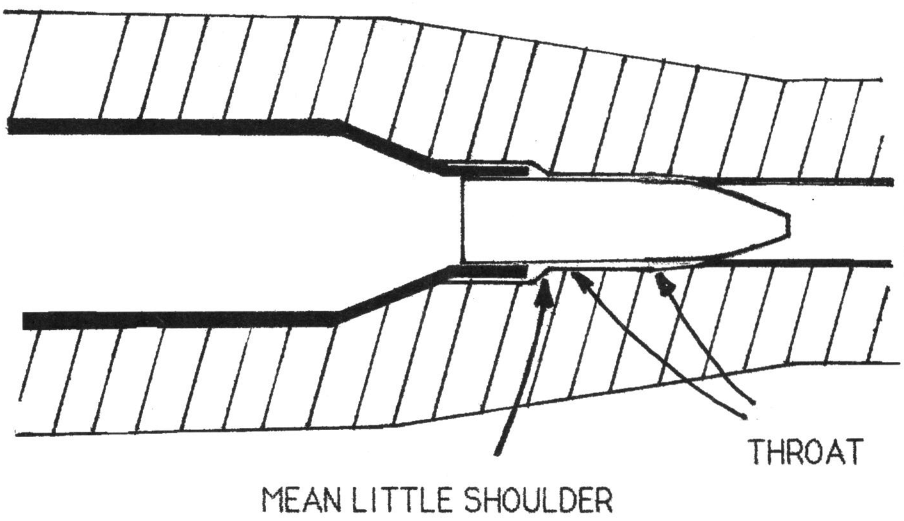
RETHINKING NECK CLEARANCE

Continued

turning was about .0004 to .0005 thicker than the final product. In other words, if I understand T.J. correctly, his completed cases, when loaded, were a total of about one-half thousandths under chamber diameter – or about .0002 clearance on a side.

And that, my friends, leads us to the point of this piece. I submit for your consideration that "fitted-neck" clearances of .0005 or slightly less between loaded case neck and chamber neck dimension may be the key to minimizing flyers, and therefore shrinking group size. How? you ask. Let's reason this thing out together.



Logic says that when you have, say, a wide .002 clearance on all sides of the neck, there exists the possibility for the rear of the bullet to be shoved aside by that amount when several thousand pounds of pressure abruptly urge the bullet forward as the front part of the bearing surface is biting into the barrel just ahead of the throat. If this indeed happens, it seems reasonable that several disastrous events could occur. First, the bullet could be forced into the barrel crooked. In the process, the bullet would be reswaged into a configuration the bulletmaker never intended. The question then becomes, why spend more for a bullet swaged to jillionth-of-an-inch tolerances when it's going to be reduced to a distorted chunk of silly putty before it ever flies to its destination? Granted, this is overexaggeration, but perhaps it makes a point.

Wouldn't the throat correct any misalignment and reliably start the bullet straight in the barrel? I don't think so. In the first place, throats, like chamber necks, often have generous dimensions. Consequently, a throat may only slightly correct bullet misalignment (depending on how close to bullet diameter it is) before the bullet is forced into the bore.

As I see it, the bullet shouldn't rely on the throat to help straighten it for insertion in the barrel anyway. Why? Because at the start of the throat (and the end of the neck) lurks a veritable nightmare to a precisely swaged bullet. I'm talking about the mean little shoulder – usually cut at 45 degrees – pictured in the illustration. If the case neck is thin enough to permit it, there exists the possibility for the bullet to scrape against the shoulder as the bullet is violently nudged forward by a rapid rise in pressure. It would seem that this little shoulder could rearrange significant metal along the side of the bullet. And if you're shooting a flat-base bullet, chances are you can kiss part of that delicate little pressure ring goodbye right then and there.

We can safely presume this would do nothing good for accuracy, although the pressure ring itself surely is smoothed down and probably swaged rearward in the ride of the bullet down the bore. If any of the above horrors do occur (and I believe they do), could bullet mutilation account for those flyers we either grudgingly accept or blame on conditions? Based on my admittedly limited experiences with four rifles, I say yes.

I hear you. You're screaming that's what benchrest dies, neck turners, custom bullets, selected cases and expensive gauges for measuring bullet runout are for – to make darn sure the bullet is precisely centered in the loaded round. Well, I went through a dismal, frustrating Runout Phase, and I was not impressed. I found it to be an exercise in futility. Lovingly prepared 6PPC cases exhibited different amounts of bullet runout with

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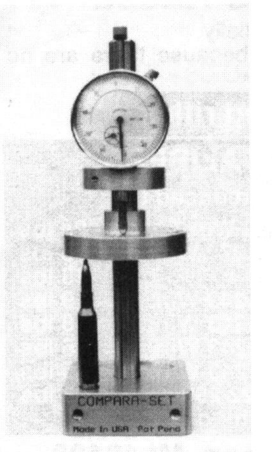

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every loading. I know this because I still have a runout log documenting bullet wobble on every individual case I was shooting. It was only when I began turning necks to "fitted-neck" dimensions that I discovered what I believe caused the runout in those cases. I theorize that the malady arose from the neck-sizing operation, even though I was minimally sizing the necks and using a benchrest neck-sizing die.

How did I arrive at this conclusion? When I switched to extremely close neck clearance, runout virtually disappeared. I was using the same bullets, turning necks with the same care and seating bullets with the same Wilson straight-line tool. The only difference was that because of the close fit between neck and chamber, neck sizing wasn't required at all. Once I eliminated neck sizing, loaded-bullet runout suddenly went away. However, there also exists the slight possibility that runout was to some extent reduced because the thicker necks fitted more snugly in the Wilson straight-line seating tool.

Actually, when the clearance between the loaded round's neck and the chamber is .0004 total (.0002 to a side), runout becomes an academic issue anyhow. There's no choice but for the bullet to be started straight and steered unharmed across the mean little shoulder, because the case neck, sandwiched against the chamber, unerringly guides the base of the bullet straight forward until the bullet base exits the end of the case neck. This assumes that the neck is turned precisely, without variations in wall thickness.

Optimum bullet alignment would be achieved, it seems to me, if the bullet is seated against the lands, so any misalignment, however slight, is corrected as the bullet is forced into the lands upon closing the bolt. The benefits of this system also would be enhanced, I suspect, if the chambering reamer was configured so the bullet you choose to shoot is as deep as feasible in the neck while the front bearing surface of the bullet touches the lands. This way, upon firing, the bullet engages the barrel as fully as possible before the base exits the case neck. It also would seem logical that this system would work better with flat-base bullets than with boattails.

What about the rigidity of the case neck? Even if there is wide clearance between it and the chamber, wouldn't the neck reliably hold the bullet centered and escort it safely across the mean little shoulder upon firing? I doubt it. When the bullet first begins to bite into the barrel just ahead of the throat, and the pressure starts multiplying, reasons suggests that the thin neck would slam against the chamber like a door in a windstorm, starting at the exposed area behind the base of the bullet and working forward. If so, it would leave the bullet partially or totally unsupported before it can start straight in the barrel. If the bullet has been seated hard into the lands as a result of the reloading process, this conceivably could happen even before the bullet begins to appreciably move. After all, it's reasonable to suppose that the thin neck is going to yield before the heavy and relatively tough bullet consents to instantaneously squeezing into a hole somewhat tighter than it really wants to enter. (If you want an eye-opening experience, take a hammer and try driving a jacketed bullet into the muzzle of a junk barrel of matching caliber.)

Then there are the effects of variations in case-wall thickness, as measured at points between head and shoulder. Some serious experimenters, including Merrill Martin and Creighton Audette, have reported this to be a critical factor in accuracy. The associated problems are several. One scenario describes a flawed case bending like a banana during the firing

Continued on next page

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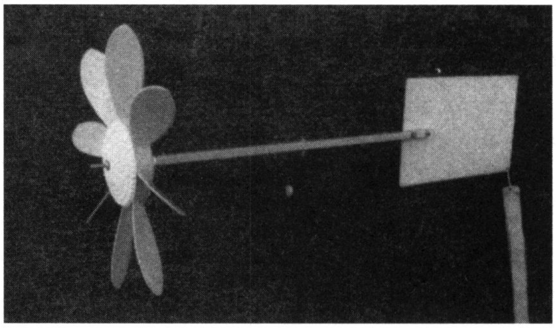

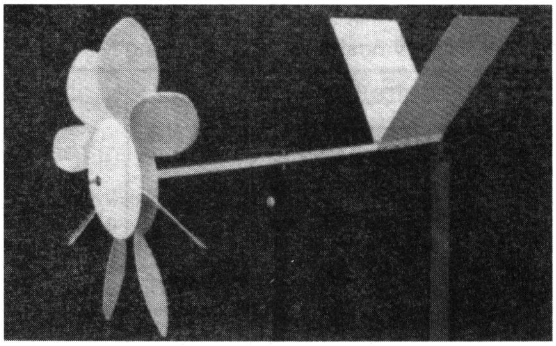

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RETHINKING NECK CLEARANCE

Continued

sequence, pushing the case neck and bullet to one side of the chamber before the bullet exits the neck. Another scenario points to the same event creating barrel vibration problems, either by directly bending the chamber area or else by pressing the head of the case unevenly against the bolt face, causing the bolt to set up movement. Or all of the above.

If the case neck indeed is pushed to the side of the chamber by case-wall inconsistencies, this problem, at least, would be eliminated by an extremely tight neck fitting. A fitted neck, of course, won't correct the other evils, but one out of three is better than none out of three.

Taking all of this into consideration, it seems reasonable to suspect that with typical neck clearances, when a loaded round has either no bullet runout or very little runout, the chance STILL exists for the bullet to be mutilated by the mean little shoulder or by entering the barrel crooked. And when there is substantial runout, bullet mutilation is virtually assured.

In my experience, the magic occurs only when neck clearances are so minimal that, during the reloading of fired cases, bullets can be firmly held without any neck sizing at all. If neck sizing is required to securely hold the bullet, I believe it introduces two problems. First, bullet runout will creep in, and second, the looseness of the neck will make it possible for the bullet to be compromised by mutilation.

In my rifles, the formula is simple and fixed. I carefully inside ream and then turn necks so the loaded round mikes .0004 under chamber dimensions (.0002 to a side). The bullet is seated into the lands. How hard into the lands doesn't seem to make any difference, as long as the round can be ejected without pulling the bullet.

I can't imagine, for the life of me, how this could fail to give any rifle with a true chamber its very best chance of shooting accurately. When a bullet is started straight and undamaged into the barrel upon firing, can anything better be done to assure accuracy? If there is, I don't know what it could be.

Most of us diddle with bullet seating depth and do all kinds of tweaking to try to wring the last bit of accuracy from a rifle. It can drive you to an early grave. I have elected to cut through all the mysticism and simplify my life, knowing that The Big Tweak that seems to be an accuracy breakthrough one day goes sour the next – for reasons no mortal man can fathom. If ever one of my target or hunting rifles fails to shoot up to my expectations with the fitted-neck setup described above, I'll either pass that baby on to another gun lover or start all over again. But so far, that hasn't happened.

Will every rifle shoot its best with an extremely tight fitted neck? Probably not. I suspect that a rifle possessing a flawed chamber might shoot worse this way than with wider neck clearance. If a chamber is cut badly off-center, the rigid, unyielding guidance a fitted neck provides the bullet would tend to force the bullet into one side of the barrel just ahead of the throat. This would tend to reswage the bullet even more, likely resulting in greater inaccuracy.

Of course, I also don't know for sure if a gunsmith's masterpiece, which is already shooting good, would be improved with a fitted-neck arrangement. Only experimentation would tell. It would be ludicrous of me to presume to arrogantly instruct you – the world's most accurate shooters – in the facts of life concerning accuracy. That's The Editor's job. As stated before, this piece is strictly to encourage more thinking about the neck area.

I want to stress what many of you have already realized: Experimenting with this technique is not for everyone. IT HAS OBVIOUS HAZARDS. Among them is the danger of jamming a too-tight neck in the chamber, perhaps raising pressures disastrously upon firing. And although two of my rifles set up with fitted necks are hunting guns, this would not be a good practice for many hunters and some types of hunting. If you regularly drop sand in your action, fire dozens of rounds per hunting trip, seldom clean your barrel and chamber or fire extremely hot loads, problems could occur.

But I also must add that I've hunted with my neck rifles for about four years and have fired hundreds of rounds in them and in my fitted-neck bench gun without a single problem of any type. However, I soak fired cases in vinegar for at least an hour to loosen the fouling inside; then clean the residue out, especially at the neck. I also clean my barrels thoroughly and frequently. Too, if I fire more than five rounds on a hunting trip, it's because I've met up with a bunch of incredibly dumb coyotes. That rarely happens. Multiple groups at one sitting from my bench rifle also have presented no problems.

In addition, I have gauges to check loaded rounds. When Garland Gilbreath chambers a rifle for me, he cuts a neck in a short piece of barrel, using the same chambering reamer. If the neck of a loaded round fits freely into the gauge, it will safely go into the barrel. And believe me, I check them all.

Part of my lack of trouble can also be attributed to the fact that I use only one bullet make and weight in each rifle. I usually purchase bullets by the thousand, thereby minimizing the possibilities of neck tightness caused by variations in bullet diameter. As another safety measure, I only shoot the beautifully consistent target bullets from the bulletmakers I've discovered in this publication.

One final warning: A LOADED CASE NECK WITH .0002 CLEARANCE ON ALL SIDES BETWEEN THE CASE AND CHAMBER WILL FREELY SLIDE INTO THE CHAMBER NECK. IF THE NECK BINDS EVEN SLIGHTLY, IT IS TOO THICK AND COULD BE DANGEROUS IF THE ROUND IS FIRED.

The fitted-neck concept, of course, is nothing new. I imagine it has been around ever since group shooters first began fiddling with tight necks. But except for an occasional aside in Precision Shooting in years past, the subject has been totally ignored.

Regardless, perhaps this discourse will give those of you who fearlessly stalk the elusive Lesser Group a reason to think the matter through. I've tried to emphasize that the preceding theory is mostly that: theory. My sincere wish is that this piece will produce opinions and experiences from those more knowledgeable and insightful in interior ballistics. I, for one, would welcome either agreement or rebuttal, should The Editor choose to publish comments.

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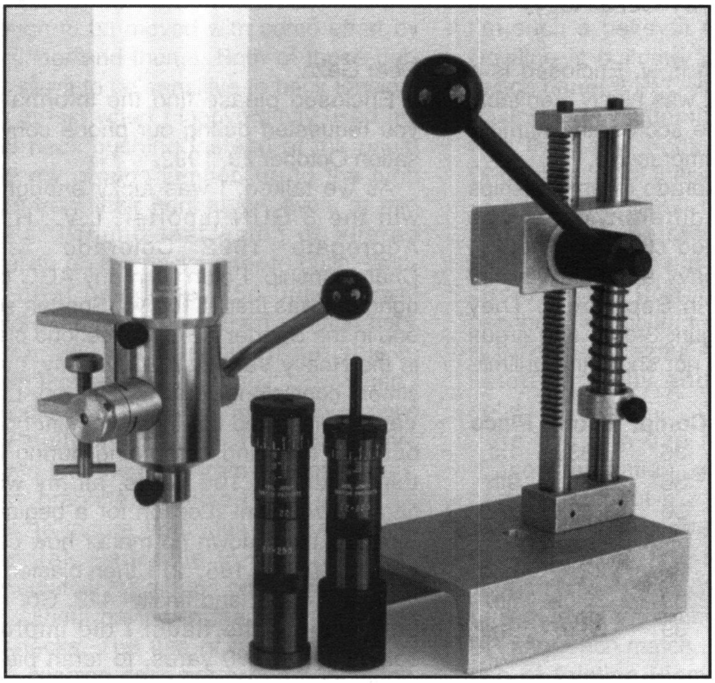

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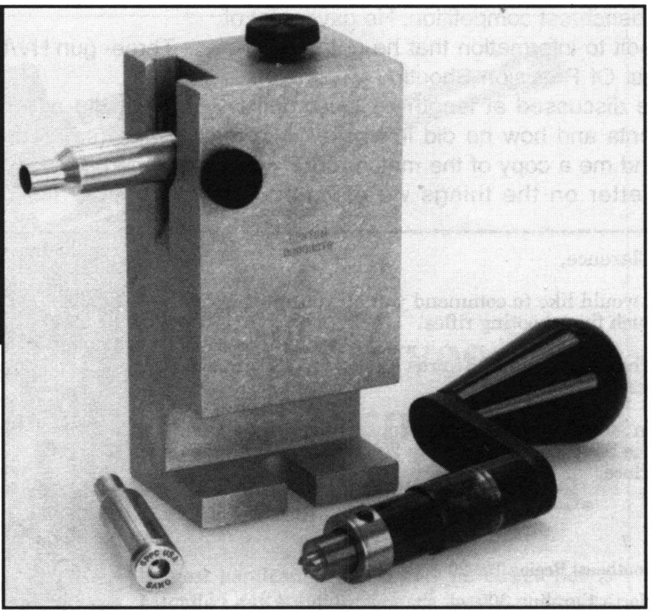

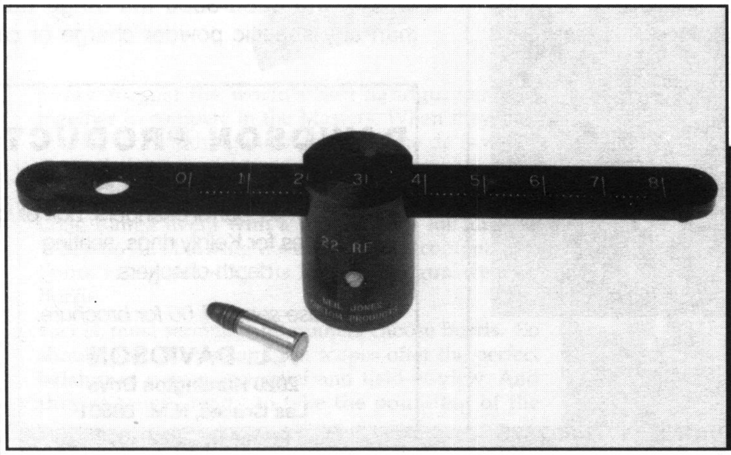

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GETTING STARTED IN BENCHREST

by Dan Kincaid

(Introduction by Geza Nagy)

Dear Dave,

About a year ago, (late 1991) I received a letter from Dan Kincaid who lives in Littleton, Colorado. He was preparing to start first shooting benchrest for the first time in competition, in the coming year (1992).

In this letter, was a complete list of all of the necessary tools and accessories needed to prepare cases for loading such as loading dies, neck turners, trimmers etc. He asked my opinion of his selection of these items. He wanted the best of everything, spare no expenses.

I found no fault with any of his selections, as they were all made by reputable manufacturers. They were all Precision Shooting advertisers. It was a long list. I decided to call him by phone instead of writing a letter. He told me he got a lot of information about loading, cleaning etc. from Precision Shooting Magazine. I added some tips of my own.

He called me again on October 29th of this year (1992). He was elated that he had a successful season in his first year of benchrest competition. He gave a lot of credit to information that he got from The Best Of Precision Shooting Volume Two. We discussed at length his accomplishments and how he did it. I asked him to send me a copy of the match reports and a letter on the things we discussed. I received them both now. Enclosed is a copy of both. I felt it was highly creditable in his first year. The scores and number of competitors was impressive.

The Northern Colorado Championships was held on two different dates.The sporter and unlimited class was held in June 1992. The heavy and light varmint classes was held in September. They both counted in 2-gun, 3-gun, and 4-gun aggregates. He did not shoot the unlimited class.

	Comp.	Score	Place
100 yard sporter	36	.2338	1st
200 yard sporter	36	.3331	9th
Grand agg. sporter	36	.2835	2nd
100 yard H.V.	39	.2200	2nd
200 yard H.V.	39	.2671	3rd
Grand agg. H.V.	39	.2436	2nd
100 yard L.V.	34	.3560	24th
200 yard L.V.	34	.3829	10th
Grand agg. L.V.	34	.3695	15th
Two-gun agg. HV/LV		.3065	3rd
Three- gun HV/LV		.2988	1st

He did all of this with the older USA Sako (small capacity) cases. He never owned any 220 Russian cases.

Geza J. Nagy

Dear Geza:

Enclosed please find the information you requested during our phone conversation October 29, 1992.

As we talked, I was lucky enough to win the 3 GUN (sporter, L.V., H.V.) Aggregate 1992 Colorado State Championship. I didn't win any AGG outright, but was first at 100 yd. Sporter, second in the Sporter AGG and second place in the Heavy Varmint AGG. Mostly, I was simply consistent until the final day Light Varmint. I started the Light Varmint good, but with the wind screaming during the third match at 100 yards, all my wind flags blew down! (Lesson for a beginner — stake them down no matter how calm it looks). I shot .185, .271 then blasted up to a .349, .553, and finally .422. Got real ugly without the flags! I did improve somewhat at 200 yards, to tenth place, but finished middle of the pack for the AGG, thus still able to protect my lead and win the 3 Gun. I do not own an unlimited gun and did not shoot the event, thus was not eligible for the 4 Gun AGG. There were lots of better shooters on the line — I just shot some of my best matches.

I do firmly believe that no one had better equipment nor was better prepared than I was. Some might have been equal — but not better. Dan Dowling/Truman Wilson built me an excellent rifle the previous year. This Panda action on a Hall stock is a weight system switch barrel using a Lilja sporter and a Hart heavy barrel. Both are 6 PPC, .262 neck and sports a Leupold BR36x. I used 26.5 grains of Australian H322, Euber 68 flat base bullets with Federal 205's in USA cases. Actually I try for a load that operates in the 3250-3300 fps range rather than any specific powder charge or case

Clarence,

I would like to commend you on your ability to build such fine shooting rifles.

They have won 37 awards during the 1992 match season.

In fact these guns shot so consistent, I was able to win the Southeast Region Top 20 shooter of the year – 1st Place.

Thanks,
Rick Woods

Southeast Region Top 20 – 1st place

North Carolina 300 yd. championship – 4 gun unlimited champion

Buccaneer Shrimp Fest 4 Gun - 1st place
Buccaneer Shrimp Fest Sporter - 1st place

Southeast Regional Championships Unlimited Grand Champion

Va. State Championship 200 yd. L/V Champion

(7) 2nd place finishes
(8) 3rd place finishes
(4) small groups
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capacity. During the cooler morning hours I bump the powder up .3 grain and back off as the day warms up.

As we discussed, I prefer a light tension — tight enough to hold the bullet if gently bumped or bounced, but light enough to be moved with some effort by my finger and thumb. Both of these barrels seem to be sensitive to neck tension, and in fact when I inadvertently used my .258 neck bushing instead of the usual .259 my groups jumped up to the high two's from their normal low two's or mid one's. I found that using powdered graphite on the necks prior to bullet seating after using the .258 bushing will restore the accuracy. When I switch back to the .259 neck bushing I am able to retain this level of accuracy. Now when I periodically "re-turn" my necks to remove any buildup of brass that may have flowed into the neck from multiple firings, I use graphite because I over-sized the neck to insure tightness on the turning mandrel. I am able to use the brass immediately for groups on the record target without having to fire them to loosen the necks. The use of graphite with the .259 bushing does not give any perceptible improvement, and it is a hassle to use during a match.

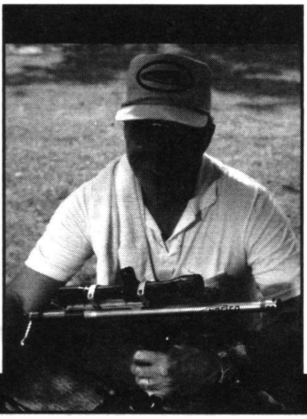
Another small but helpful modification to my Wilson neck sizing die was suggested and done by Dan Dowling. He cut .080 off the base and ran his reamer back in — the effect is to size .080 more neck on the case. I believe this allows the use of a lighter neck tension, and gives more consistent and concentric neck tension. I'm such a believer that on a new rifle Dowling is building for me right now (a switch barrel 6 PPC and 22 Waldog) I am having Dan customize the Waldog die with the same neck modification. Dan Dowling is full of these little tips and tricks — it was he, Glenn Newick's book, and all the columnists for PRECISION SHOOTING that put me in the winners circle in my first twelve months of benchrest shooting. Everyone in the sport is extremely helpful — you just have to listen carefully and pay attention to details.

As you can see from my attached "Case Preparation" guideline, I am very particular about my brass. I have only used USA cases as I've never owned a Russian case. I also keep my barrels squeaky clean, soaking them for a week or two using a chamber plug and Hoppes BR after each match. I am just testing the use of Friction Block as all my barrels were broken in before the advent of this new product. I will use it to break in my new Unlimited 1.450" Shilen (had to buy one — my wife forced me!) Dan Dowling will chamber for me. This is in addition to the other switch barrel Dan is building (Gosh I hope my wife can't count or doesn't read this!!) Anyway, I super cleaned all my barrels, heated them up in a 5 gallon bucket of steaming hot water, and gave them the full 40-50 swipes with the Friction Block. Tested one, a .223 standard chamber Hart barrel Dowling built for me on a varmint stock XP-100 action. It's a prairie dog gun, so I use H335 for velocity and ease of loading cases in quantity. As you know, this is a dirty burning powder. I did notice the rifle was significantly easier to clean. This barrel does not copper foul until I've shot too many rounds prior to cleaning anyway, but no copper was present after 15 rounds. Not a good test, but I only abuse my dog guns, and only if in a wild gunfight with the critters. (Editor: good heavens, are you saying that out in Colorado... they SHOOT BACK???).

I somewhat rambled on about some of my thoughts, but I considered it an honor when you asked me to write about my limited success. I sincerely appreciate your phone calls and willingness to share your knowledge with me.

Best regards,
Dan Kincaid
Littleton, Colorado

Continued on next page



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GETTTING STARTED IN BENCHREST

Continued

CASE PREPARATION
6PPC with .262 neck diameter
USA CASES

1. TRUE-UP NECK

Use Sinclair mandrel expander tool to make necks even and round.

2. "Mike" NECK

The objective is to have a batch that all measure approximately the same and vary only .001 from the thick side to thin side.

3. TRIM O/L

Do not trim back to 1.495 at this time — just trim back to the shortest of the batch. All necks need to be the same length so the turning tool contacts the shoulder at a uniform place.

4. DEBURR NECKS

Both inside and outside the mouth

5. TURN NECKS

Turn to .009 thick. This will give a result of .243 + .018 = .261 **CAUTION:** Be certain a loaded round with your bullet will chamber easily — a fat bullet might be too tight. In this case use boattails to fireform as they do not have a pressure ring at the base. I chuck the Sinclair turning tool in my drill press, lube the case neck, and slowly slide the case up and down, one pass only.

6. DEBURR FLASH HOLE

Use special PPC tool

7. UNIFORM PRIMER POCKET DEPTH

Use Sinclair or equivalent tool

8. WASH CASES

Wash in Lacquer Thinner (completely immerse in jar) and allow to dry

9. SORT BY WEIGHT

Try to keep in batches (14-16 cases) that weigh within one grain of each other (+ or - 5/10ths grain)

10. LOAD FOR FIREFORM

Load 1-2 grains light and have bullet at full jam (tight on lands)

11. SHOOT!!

If you want to be certain — reload and shoot twice, but be careful to clean both inside and outside neck.

12. CLEAN NECKS

Use brass brush in drill press

13. RESIZE NECK

Use Wilson die and .257 bushing — this will keep neck tight on neck turning mandrel.(Or use your F/L die)

14. TRIM O/L

Trim to 1.495 overall length

15. DEBURR NECKS

16. RETURN NECKS

Turn neck to .0086 to .0087. This results in:

.0172 to .0174
+.2430 +.2430
.2602 to .2604

This will be the loaded round diameter with boattails. It will be fatter with flat base bullets. This second re-turning step is important because the first cut leaves ridges which are "ironed out" during the fireform process, thus this slight shaving results in very consistent thickness and neck tension. (you also must adjust tool so it doesn't cut into the shoulder — remember, you trimmed O/L back to 1.495 this time. Just touch the shoulder — clean it up — no more than that.)

17. WASH CASES

Full wash in lacquer thinner — dry

18. WEIGH CASES

Confirm batch is good. Be careful no carbon is built up in a case to give a false reading.

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.17 Cal. 20 Grain $22.00/200

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.22 Cal. 55 Grain $11.00/100
.22 Cal. 60 Grain $11.00/100
.22 Cal. 62 Grain $11.00/100
.22 Cal. 65 Grain $11.00/100

6MM 60 Grain $11.55/100
6MM 62 Grain $11.55/100
6MM 65 Grain $11.55/100
6MM 68 Grain $11.55/100
6MM 70 Grain $11.55/100
6MM 80 Grain $11.55/100
6MM 95 Grain VLD $10.55/80
6MM 105 Grain VLD $10.55/80
6MM 69 Grain (15 Ogive) $11.55/100

.25 Cal. 82 Grain $14.30/100
.25 Cal. 85 Grain $14.30/100
.25 Cal. 87 Grain $14.30/100

.30 Cal. 185 Grain VLD $16.00/100
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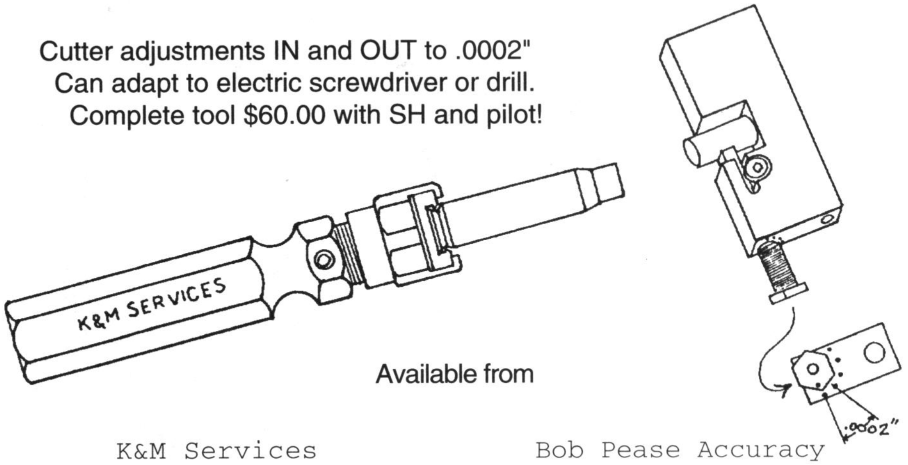

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All Neck Turner Manufacturers claim their tool turns to .0001 (1/10 thousandth). HAH! "Anyone can work to a 1/10 thousandth - picking the right one is the trick."

KENMORE, WASHINGTON

by Roger Ulrich

Vic Alverez, center, Range Chairman of the Wildlife Committee of Washington/ Kenmore Gun Ranges presents trophies to Ted Larson and Amos Frombach. Ted Larson won the most small group matches, 10 shots at 300 yards. He also broke his own range record with a ten shot .697. Amos Frombach, active at 78, won the factory class shot at 200 yards on the hunter class target. Amos is a regular at the monthly matches and knows how to make his 222 Remington win.

ECHOS FROM "THE RIFLE"

Dear Dave:

I have just read the first "Echo" in the March issue. It looks good, however, as I re-read it I realized that nowhere in the piece did I give credit to:

Broadfoot Publishing Company
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Wilmington, North Carolina 28405

Without the co-operation of Lee Carl Howe, Warren Greatbatch, and Broadfoot Publishing the reprints of "THE RIFLE" and "SHOOTING AND FISHING" would not be available to us. The books are available from the above address.

In the second "Echo" which is in your hands, could you add an opening paragraph which would give credit to Broadfooot Publishing for their efforts. They do have a new material copyright (1991) on the publications.

Sincerely yours,

Roger Stowers
214 Capital St.
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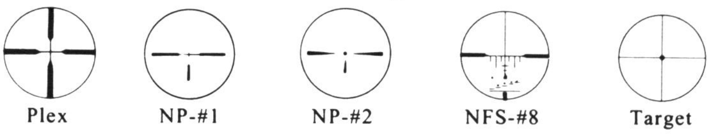

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Something Old, Something New, Something Borrowed ...

Boy, Have the Folks at Sturm, Ruger Been Busy Over the Winter

by

Richard Kayser

I took the last weekend of February off, and went touristing out at the Oregon Coast with my wife. When I got back, there was the usual three-day accumulation of bills and junk mail waiting for me. There was also this rather hefty envelope from the guys at Sturm, Ruger and Co., Inc. Ruger may have made the most additions, revisions, and outright changes/improvements to their lineup of the Big Three over the winter. Every product line has some new things to tempt us with, and some areas have undergone major changes. It is really difficult to figure where to start, so I guess in the order the nice folks in the Engineering/Public Relations Departments loaded the product data sheets into the envelope.

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For those of you that admired the New-For-'92 Ruger Varmint Rifle, but were disturbed over the lack of a lightweight, adjustable trigger...kwitcher bitchin. It is here now, placed into production effective January of 1993 on the MKII's replacement, Ruger's KM77MARKII Target Rifles, and at no increase in price over the old Varmint rifle's suggested retail. Ruger claims the new two-stage trigger design first shown to the shooting public in the 1992 debut of the limited production M77 "Palma Rifle" is adjustable for safe let off down to 24 ounces! YES! Great, but you want more you say. Okay, how about replacing the old MKII blued receiver with something more esthetically appealing, like a 400-series stainless steel version with matching trigger guard and floor plate? Still not enough for you? What if they go to a hammer-forged process for all of the barrels? That should result in a superior interior finish on all of Rugers' barrels in 1993. All right, but this is all. How's about we make all of this hardware and the 26" barrel available in a non-reflective matte gray finish, and add several new calibers for 1993?

One last addition, let's just call it a "freebie". Incorporate the controlled-feeding feature of the '98 Mauser and Old Model 70's to try and eliminate the aggravation of the dreaded double-feed while watching a chuck or prairie dog through the scope instead of paying attention to working the bolt. Barrel length remains unchanged at 26".

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Ruger has also recognized what those of us who attend at least one benchrest match a year, or just read all of PS know, Ferris Pindell and Dock Palmisano created the two most accurate benchrest cartridges in the history of the sport when they wildcatted the 220 Russian. Both the 22 and 6mm PPC cartridges will be available in the new MKII. I expect they will be the most accurate combinations offered by Ruger this year. I am going to be on the phone talking to the Ruger plant in Arizona about one or two of these for a test session for the spring Rockchuck season. Now lemme' see, the new KM77VTMKII can be had in .223 Remington, .22 PPC, .22-250, .220 Swift, 6mm PPC, .243 Winchester (but, surprisingly, not in 6mm Remington), and .25-06 Remington for us live varmint shooters. I had hoped for the .257 Roberts to be chambered this year, but no such luck. The only big bore chambering is the .308 Winchester, which might prove to be a real threat in the Hunter Class production wars, now that it has a nice adjustable trigger, and that fat, flat forend. Maybe I could talk them into one in .308 and do some production-class HC match competition...?

Sticking with the Ruger boltguns, but adding new calibers, they are also offering the standard model 77MKII in 6.5X55 Swedish. I have heard rumors that this was done just for Bob Jourdan and some fellow named Behnke who writes for Handloader and Rifle magazines, but nobody at Sturm, Ruger and Company will confirm or deny the story. Anyway Bob, just enjoy the, dare I say it, burgeoning acceptance of the old Swede by today's manufacturers and the shooting public.

The next paragraph or so is for those of you with the same fatal attraction for single shot rifles and oldtimers that I have. Ruger is also adding half-a-dozen calibers to the Number One, and the best of the lot is the .22 Hornet in the 1B standard rifle. Single Shot falling block rifles and rimmed cartridges must have been a simultaneous development, and to my way of thinking go together like biscuits and gravy on a cold winter morning. There are a lot higher velocity chamberings available in the Number One, but shooters looking for that last .050" in accuracy generally move past the single shots to boltguns on the new rack at the gunshop anyway. Looking at a .22 Hornet Number 1B with it's 26" medium taper barrel and a nice scope is almost like taking a trip back to a simpler day and age. Even for me, distances take a backseat to the esthetics of the shooting experience when I think about something like this. It might turn Rockchuck shooting into Rockchuck stalking. It would, at worst, make it a distinctly sporting proposition for all involved. I want one.

For those of you contemplating something with just a bit more steam, the folks at Ruger are also adding the .218 Bee in the 1B and the 1S light sporter. With the long 26" barrel, the Bee would pack a greatly enhanced sting, making it perhaps a 250 yard varmint rifle. Perhaps you envision a bit more modern chambering in Ruger's thoroughbred, something with a reputation for giltedge accuracy? There really is something for everybody this year, how about having one in 22 or 6mm PPC? Comparative ballstics from the 1B's 26" barrel show the decidedly effective .223 Remington pushing a 52 gr bullet out at 3400fps. The 22 PPC is not far behind, nudging the same bullet to 3330fps. With a lightweight 70gr bullet the 6mm PPC can attain 3140fps from the 1B, and muzzle energy is an even 200fpe ahead of the .223. At 200 yards the .223 and 22 PPC are almost dead even in ME and FPS, and the 6mm is still holding the same edge over either.

The rest of the Number One news centers around introduction of the .404 Jeffery and .416 Remington cartridges in the 1H Tropical Rifle variation. I think the .416 Rigby superior to either, which is why I bought one of those last spring. To date I have killed three Rockchucks with the .416, using a 400gr softpoint at 2600fps. Eight months later I am still unable to ascertain who suffered the most damage. At approximately 6000 foot-pounds of muzzle energy, recoil is in the disruptive category. It will disrupt your daily routine for a week or so after shooting the thing, just remembering the recoil. The introduction of the .22 Hornet and .218 Bee are superb news for the nostalgia shooter, and for those whose varmint hunting opportunities are generally confined to the more densely settled areas of the country. That, and the fact that shooting one is just pure fun.

If you thought the new KM77VTMKII varmint/target rifle sounded neat, but the Hornet or Bee would be more your cup of tea, sit down and think about this. For about the same amount of money it costs to set up and reload either of the smaller .22 centerfires, you can buy .22 Magnum ammunition. Which is okay, but even a proper .22 rimfire varmint rifle should have a target-style stock and a little more barrel weight. Ruger calls it the 77/22 Varmint rifle, and it weighs about a pound and a half more than the standard model. It also has the same type of laminated stock as the big brother centerfires, and a 24" barrel. According to Ruger, most manufacturers of the .22 Magnum ammunition optimize loads for the 24" length.

It will be interesting to see if the varmint model .22 Mag (Ruger calls it the K77/22VBZ) gives the magnum enough of a velocity increase to make the extra length worthwhile. They ship the standard magnum model with a 20" barrel, and have not seen fit to change that length.

That is the early story for '93 from the folks at Sturm, Ruger and Co., Inc. Lots of good things and no bad news.

Take Care and get ready for Rockchuck season.

Rich

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(P.S. It's made in USA, Mr. Lilja.)

SCOTTISH 322 RETURNS

by

Dick Wright

Dear David,

The Wright household has spent more time than was convienent the last year looking for Scottish H-322 powder. The slightly slower burning rate of the Scottish powder seems to be ideal for Glorya's HV gun which is a standard length 6 BR. Since Hodgdon switched to the faster burning Aussie powder a while back, Scottish 322 has become both scarce and expensive. We managed to buy some at the Super Shoot last year, at a fairly high price, but have found little since then.

The Scottish powder shot so well in her gun (she placed fairly high in Holton's last two matches in 1992) that we were starting to panic a bit, wanting to insure that we had enough powder to last as long as her barrel shoots well. When the barrel dies, the gun will become a Talldog and we will concern ourselves with other problems.

Recently I had a talk with John Rovtar who is sales manager at Scot Powder, which is a wholly owned company of the Austin Powder Co. of Cleveland, OH. What I have learned is good news for the Wrights as well as, I'm sure, many other benchrest shooters. Scot Powder has entered into an agreement with Nobel Explosives Co., Scotland plant, which makes them the exclusive importer of Scottish 322. In other words .... Scottish 322 is back.

I am told that the 322 comes from exactly the same plant (there is only one gun powder plant in Scotland) and is made to exactly the same formula as the H-322 formerly imported by Hodgdon.

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Glorya and I have obtained a supply of the new Scottish 322 and plan on testing it and using it in matches this summer. This winter the weather has been too d--- cold to allow us to do any meaningful testing and shooting.

I have also bought some Brigadier 4197 to shoot in my LV Talldog, which is new to me this year. A while back Lowell Hottenstien told me he was using 4197 when he shot the group which was thought to be a new record in his short BR. As I recall, it was about a .107" group (ten shots). He said he used his own 62 grain bullets and was happy with the combination. Lowell said it was a "blooper" load. I didn't know exactly what that meant because in Michigan most any load under 3400 FPS is considered a "blooper" load.

Anyway, my plans are to find a "sweet spot" around 3100 FPS that will really shoot. I have two objectives......... one being to eliminate having to use the FL (Miracle Dies) every time I reload, the other to minimize recoil in the lighter gun. I find it more comfortable to shoot a 13 1/2 lb. gun and am trying to make the new 10 1/2 job as comfortable to shoot. I have only had an opportunity to shoot it once but the results were very encouraging. We are leaving, very shortly, for the Cactus and I will let you know how it works out.

I have learned several interesting things talking to the guys from Scot Powder. The parent company, Austin Powder Co., was the first manufacturing plant in Cleveland, being built in 1833. Scot Powder Company was founded by Dr. Spence "Doc" Watson in 1988 and the assets were acquired by Austin Powder in 1991.

The fellows tell me that, since the company was founded, the marketing focus has been toward powders for reloading shotshells. They have, only recently, become fully involved in rifle powders. They are still in the process of setting up a dealer network that will make the powder easily available to benchrest shooters.

We purchased our Brigadier 4197 from Gamaliel Shooting Supply, P.O. Box 156, Gamaliel, (pronouned gä´ mail) Kentucky 42148. Their phone number is 1-800-356-6230. Love "800" numbers. Gamaliel had the powder in stock, took plastic in payment and shipped when they said they would.

A free shotshell, handgun and rifle reloading manual can be had by contacting Scot Powder Co., 430 Powder Plant Rd., Box 317, MacArthur, Ohio 45651. Their phone number is 614-596-2706. They also have a list of their dealers so you can use the one most convenient to you.

I will include a couple of notes on the powders that should be of interest to benchrest shooters........

Brigadier 322. See above, the old Scottish 322. Sure works in the Child Bride's gun.

Brigadier 4197. Very similiar in burning rate to 4198. However,this stuff has SMALL GRAINS. I have always avoided 4198 because the grains are the size of fireplace logs and won't work well in my Jones. I am too lazy to weigh charges.

Brigadier 3032. Used successfully by some local shooters. Similiar in burning rate to 3031. Scot's loading data shows a maximum load of 28 1/2 gr. with 63 gr. bullets for a velocity of 3300 FPS. I'm sure the locals used this as a starting load with 68 gr. bullets.

David, there seems to be several advantages to using this powder which have been proven by my (limited) experience and substantiated by data from the NRA Reloading Handbook. First, all Scot Powders are short or small diameter grains and flow easily thru your measure. Secondly, they are a nitrocotton single-based propellant that burns cleanly and makes for easier cleaning.

These powders which are harder and therefore more expensive to make than double based powders, burn 300 to 400 degrees cooler than double based powders. This translates into longer barrel life which is of great interest to us.

David, I thought you might be interested in these products. The Wright's were very happy to find Scottish 322 was, again, available.

I am enclosing a copy of the NRA Reloading book and other data for your info.

Best,
Dick

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THE DAKOTA DOG BUGGY

By

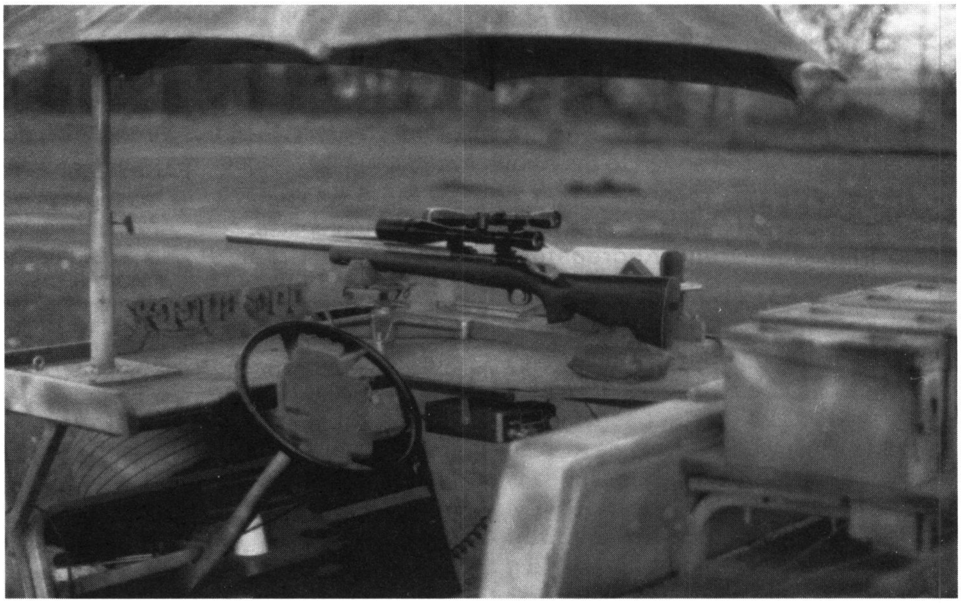
Old Dad Del Lamb

Well, it's finally here...the only way to hunt prairie dogs and wood chucks. These rigs make every other bench or table as obsolete as a .218 Bee is for shooting dogs at 500 yards. This is solid comfort; no more sore elbows, knees full of cactus, and some of that other "Stuff" that lays around where cattle roam...no more sore back, no more sore neck. It used to take me three days to recuperate after three days of "fun in the gamefields", where my wife was convinced that I was having fun. Until you have driven around a dog town in one of these rigs, you have never really had fun shooting prairie dogs!

There is room enough in/on one of these rigs for everything that one might need for an all day shoot. I have taken as many as six rifles at one time, ammo for all of them, binoculars, plus a cooler for the "good stuff", and more yet. These are 1984 model EZ-GO golf carts with an oil injected 2 cycle, 6 horse power Robin engine. They are driven, and do not have transmissions. There is a little lever by the switch that retards or advances the firing, and the engine runs either forward or backwards. All you have to do is push the gas pedal, and steer. When you take your foot off the gas, the engine stops, and you shoot prairie dogs. When you get ready to move, you push the gas pedal down.

Continued on page 56

A happy man with his toy!!



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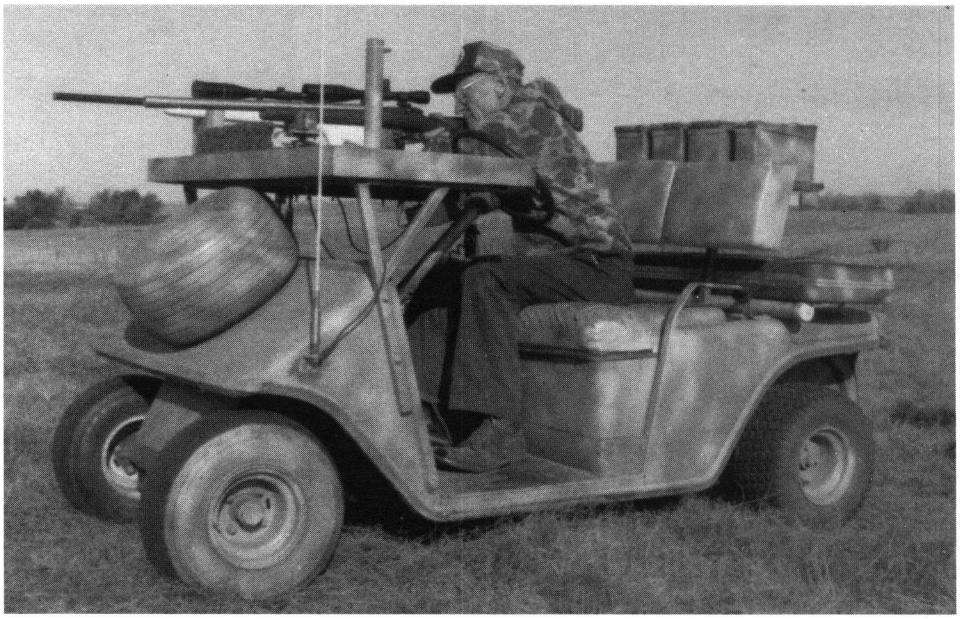
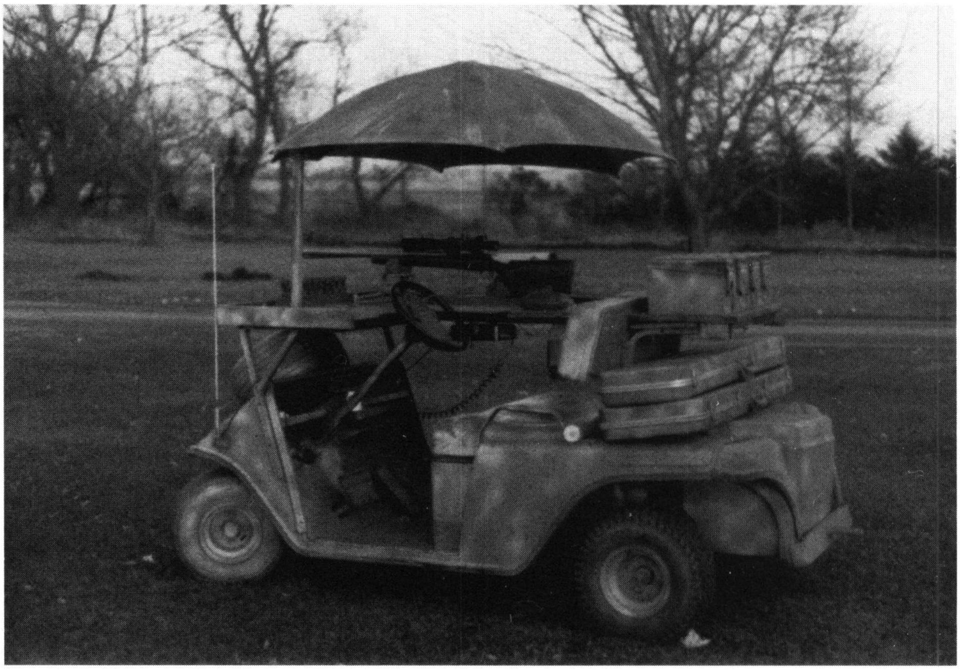
THE DAKOTA DOG BUGGY

Continued

The idea came about one frustrating afternoon on the local golf course (I live in Sherman, South Dakota). For some reason or other (almost undoubtedly me) the golf balls didn't want to stay in the fairways that afternoon, so I spent most of my time out in the rough, looking for lost golf balls, and dodging gopher holes with my golf cart. My mind was wandering a bit afield from the golf game at hand, when I came up with the thought...that if I had a rest on this rig, and a 22BR...by heavens, I bet I could have more fun on this golf course than I was having chasing errant golf balls! A flight of fancy, good for a brief chuckle...that was destined to grow into reality, as we shall see.



Old Dad Del about to do in a P.R. dog with the .22 BR.



After buying the golf carts, my shooting partner Don Nussbaum from Garretson, S.D. and I got out the welder and saws and two days later we were in business. Our first hunt was a one day trip to Gann Valley, S.D. on the 1st day of February, 1992. It was a 70 plus degree day with no wind and did we ever shoot dogs! Our next trip was a long Memorial weekend to the Pat McLaughlin ranch on the Standing Rock Reservation in north central South Dakota. This is the 1200 acre town mentioned earlier. Don took Friday off and I had things loaded and ready to go when he got home Thursday night. We took an older pickup camper that Don had at my place and left it at Pats so we have a home away from home. For once, we had good weather all four days. I shot 1038 rounds that trip and Don shot about the same amount. Two friends, Rodney Dubbledee and Matt DeBates joined us on Saturday and had a good shoot. Rodney had a small table on a four wheel ATV that worked pretty well except it was not stable in the wind. We have shot in 20 to 30 mile per hour winds and there is no effect at all on the Dog Buggy.

Most of my varmint shooting is done with a Remington H.B. .223. Other favorites include a Remington H.B. .22-250 in an H-S Precision stock, and a .22BR in a rebarreled Remington 40x, with a Shilen #10 stainless steel barrel 26 inches long, pillar bedded in the original stock, and sporting a Shilen 2 ounce trigger. With Hornady 50 grain SP bullets ahead of 30.0 grains of 2015, and warm temperatures, these run over my Oehler Chronograph at well over 3600 feel per second. Off the bench it consistently groups in three quarters of an inch at 200 yards, with many in the half inch range. That kind of accuracy, once in the field, assures that we don't miss many prairie dogs. The work on this gun was performed by Earl Girton, of rural Sioux Falls, South Dakota, and is absolutely first class! He has also just put together a match 4 with a 25 inch Shilen match grade barrel, in #5 contour for me, in an H-S Precision stock. It will also have a Jewell trigger come summer time. I've

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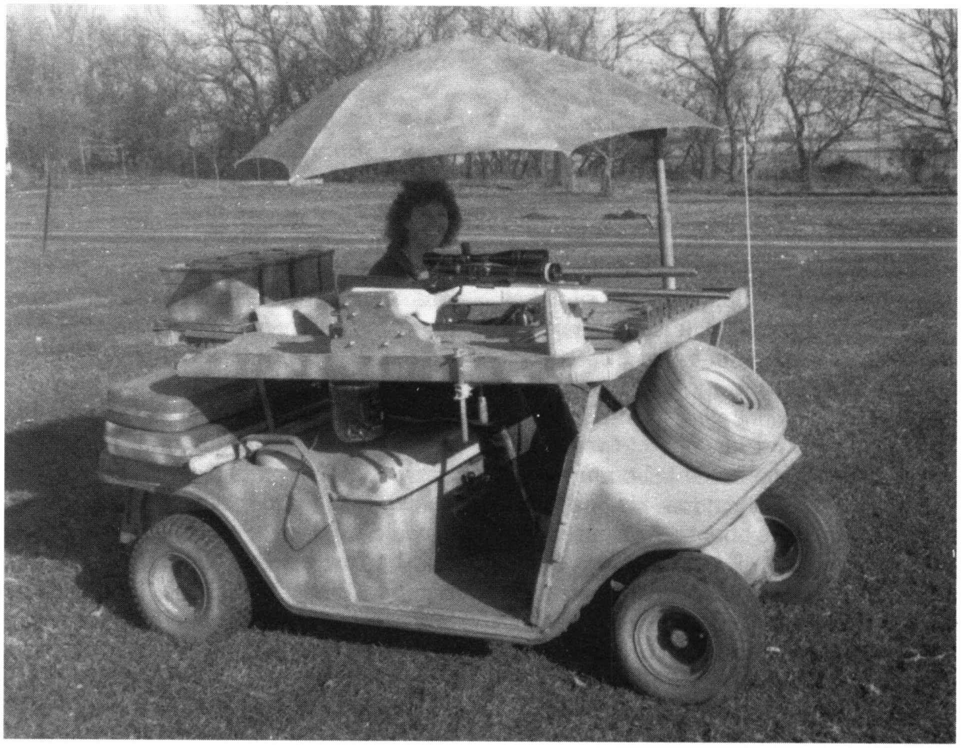

just started shooting this one; I'm getting groups in the low 4s at 3839 feet per second with Berger bullets and H335 powder. I've gotten 3900 feet per second, but accuracy was not as good. My shooting partner Don Nussbaum has a model 70 Winchester in .223 chambering, and shoots it very well indeed. For a factory rig, it shoots quite remarkably!

Between our first field trip and our second venture, the dog buggies underwent some changes. New camouflage paint, CB radios, and an umbrella on mine, and some ammo boxes on Don's were added. The boxes are used mainly for tools, cleaning equipment, tow cables, and etcetera. I am planning to add a tape deck to mine. Maybe I will put a cab on it later, the better to cope with South Dakota weather. (Editor: I have to think that you could buy a war surplus tank, and save a lot of trouble...). Note the jar under the top. There is a hole above it, and all expended cases are simply dropped in. I'm sure that there's a lot of shooters out there that can think up ways to make them better yet.

Contrary to what we first thought, these rigs CAN be tipped over! Just don't ask me how I know that!

In closing, I have never shot woodchucks, or rock chucks. Remember that old saying... the one about "have gun, will travel"? How about "Have Dakota Dog Buggy, will travel"? Hint, hint, hint!

By the way, the cute one is not Don. Actually she is my daughter and the one responsible for the Dog Buggy sign. If anyone would like more information on the cars my phone number is 605-594-3929.

Old Dad, Del Lamb
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WHAT IS AN ACCURATE VARMINT RIFLE, ANYWAY?

by

John Rush

Maybe varmint hunters are born that way. With a different mind set. Let me tell you what I mean.

Back in 1942, at age six, I began to carry a 1903 Winchester pump. My dad would give me two cartons of twenty two shorts a year, one in the fall on my birthday, and one for Christmas. He had some very definite ideas about how those shells were to be used. They were for putting meat in the pan. Considering the abundance of cottontails around our farm, this was a goal easily accomplished. Occasionally we would make the long trek up to tall timber a couple of miles from the house and get some fox squirrels. Dad and I had to share the rifle on these squirrel hunts in those early years. We highly prized fried squirrel so dad did most of the shooting on those expeditions.

It was in my own wanderings about the farm, that I began to work over the English sparrow and starling pests pretty hard. This began to cut into the cartridge/meat ratio pretty bad, and during world war II cartridges weren't all that easy to obtain. Luckily, dad could see the merit in pest reduction, and joined in occasionally, even though you could see it violated his basic concept of what a rifle was for. For non edible pests, he leaned toward dynamite and strychnine.

As I began to mature, (age eight) I started to see how FAR I could hit those little varmints. Now I had taken a quantum leap. This was going to far. I didn't know it then, but I had become a varmint hunter. In order to indulge this perversion, I would stroll over to my uncle's house and borrow his BOLT ACTION Savage and use LONG RIFLES! WOW! It didn't take me long to see I had stepped into a new world of accuracy and range...I seemed to be following a road I was born to, not of the teachings I received.

By age 11, a guy named Weaver had contributed to my delinquency with an affordable rifle scope. By 15, I had been introduced to Centerfire and handloading with a Lyman tong tool. The "old guy" who sent me down this path to hell was a 257 Roberts fan, and got me into a 99 Savage 250/3000. It was all down hill from there. Ground hogs. My mentor, Chuck Hibbs, was a woodchuck addict. He sucked me right in.

Strange as it might seem, up to that point, I thought little about rifle accuracy. I was a product of my time and place. All rifles were deadly accurate, and if you missed it was your fault. Magazine articles would mention accuracy in passing. Gun writers shot "groups" and anything within about 3 inches at a hundred yards was plenty good for whitetails to grizzlys. As years passed, a few varmint hunters began to come out of the closet and write about shooting groundhogs and gophers. These nuts were talking about one inch groups. By the late 1950's I had fallen in with a band of savages at the University of Iowa. They shot "groups" from benches. The light began to dawn. The 99 went down the road, and a bolt action Belgian Mauser in 243 took its place. Then more rifles, with heavy barrels. Bigger scopes. Fancier loading presses. By 1961 I had wandered into prairie dog and rockchuck country. I was a goner.

One thing I learned early: a varmint rifle is not defined by what it will do on paper, nor is it defined by how well it performs the function of regularly and cleanly killing varmints within the circumstances under which you shoot. No matter what rifle you choose for the job, it is a trade off. You trade range for mild recoil, accuracy for killing power, (within limits), and personal taste for practicality.

I never did get over my love of dropping starlings and sparrows. For this job a 22 rimfire is entirely adequate. It has to shoot into a killing zone of about 3/4 of an inch out to 50 to 60 yards. I can shoot Lapua or Ely and make it shoot better, but by doing so I give up range and killing power, and I like to see them disintegrate instantly. Federal Hi Power hollow points do that, and they do it consistently. The extra margin of accuracy at 50 yards with target ammo takes away my trajectory advantage at 75 yards. Extra accuracy at 50 yards is not necessary, and robs me of range. When one takes a step up in target size to fox squirrels, the accuracy requirement for head shots remains about the same, but the difference in killing effectiveness becomes the really significant factor. This summer I hope to improve the whole picture with my new

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Cooper 22 CCM, but again, a trade off. More noise, another significant factor under the circumstances, will bring my popularity to new lows. I shoot on the farm, only 50 yards from the city limit, golf course, and nearest neighbors. I have a 90 degree safe vector of fire, and so far the score is nothing to nothing, and I plan to keep it that way.

Taking a step up toward "real" varmint hunting, consider the good old .222. It will knock heck out of anything up to a fox or maybe a coyote out to 200 yards, and gets real marginal at 300. Tests have proved to my satisfaction, that good target bullets will expand and kill at 200 yards, and will punch through and wound at 300. You can increase that range to 300 yards with blitz type bullets. Chances are, you are going to trade a little accuracy for this extension of effective killing range. But just how accurate does that little rifle have to be? Considering that it's maximum humane range on small varmints is 300 yards, and that a prairie dog on the AVERAGE is about 6 inches tall and 2 1/2 inches wide, it has to shoot into about .8 inch at 100 yards to make consistent hits at it's maximum effective range on that target. But OOPS. We have two other problems to deal with, range and wind. We won't even consider here a less than optimal rest. At three hundred yards, that little 50 grain blitz at 3200 fps is tossed off target 12 inches by a ten mile an hour breeze, and double that amount by a twenty mph gust. If you are a really good wind estimator, and can guess it to within 5 mph, you are now shooting a rifle capable of 8 and 1/2 inch groups at a 2 and 1/2 inch wide target – Your original two and a half inch 300 yard capability plus six inches of wind estimation error. Your odds of a clean hit on an average prairie day, at an average juvenile prairie dog has fallen to about 25% at 300 yards. Now, what about range estimation?

Do you walk out and set range stakes, scaring all the dogs down for two hours? Not I. Fortunately, the 50 grain bullet at 3200 will stay within the body height of a juvenile dog out to almost 300 yards, if sighted in at a little over 200 yards. A slight holdover at maximum range does it. A short time of shooting, and knowing about where to hold on the visible mounds, reduces range estimation to a minor factor with a 222, within it's EFFECTIVE killing range. You are going to look pretty good on the big fat mommas, and you are going to miss way over half of the family.

Now lets say you are a fussy benchrester (nothing wrong with that) and a .8 inch group at 100 yards ranks pretty low on your list of desirable results. You want something that will shoot into half that group size. If you go to a different bullet of harder construction to do it, you give away a hundred yards of effective range. If you reduce velocity, to get it, you have introduced a much larger range estimation variable, and also shortened effective killing range. You stand to gain about a 14% increase in hits at 300 and about a 100% loss in clean kills with body hits, using harder bullets. Cutting velocity by 200 fps will increase wind drift errors by 16% giving away your accuracy advantage and some of your effective killing range. The trade offs begin to become quite clear.

Well to heck with these pipsqueek benchrest calibers, you say. By going to the Swift, you put yourself in the 600 yard killing class. A half minute Swift with good range estimation will nail 5 out of 6 juvenile dogs and all the adults at 600 yards. Now we're really cookin! Not such a fine rifle for heavily settled areas, but who cares, lets go get those prairie dogs. But here comes wind again. At 3800 fps with a 55 gr spitzer, in a half minute rifle we have reduced our group (if you can find a half minute Swift) to 5 and 1/2 inches at 300 yards. At 600 you have about a 20 inch group, assuming the same 5mph wind guessing error. You are hitting about 12 percent of the juveniles. Not so hot, huh.

Well shucks, lets make a real noise and recoil tradeoff and go to a 300 Winchester mag. That'll kill 'em!

Using 180 gr match hollow points under the same range and accuracy conditions, you maybe have a ten inch rifle at 600 yards, against an average 2 and a half inch enemy. You can now do at 600 yards, about as well as you could do at 300 yards with that puny little 222. Or can you? Sighted in at 200 yards, your little .222 would only be about 7 inches low at its maximum effective range. Your 300 mag sighted in at a practical distance of 300 yards will be hitting about 50 inches low at ITS maximum effective hitting range (25% hits on average) of 600 yards. Assuming you have one hell of a good range finder, you have doubled your effectiveness and lost all your companionship and most of your places to shoot. Not to mention considerable discomfort, even with a muzzle brake.

What is an accurate varmint rifle, anyway? Gee, I had fun with that little pump 22.

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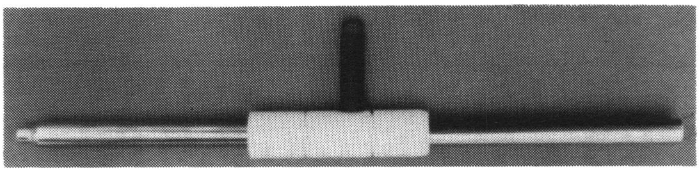

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RIMFIRE BENCH REST

by

John E. Darney

Editor:

I read with interest the article in the January issue regarding "Rimfire Bench Rest". Last year, the Wallkill Rod and Gun Club ran a Friday night, winter, off-hand 22 league. This was shot from our enclosed pistol range with muzzles out the windows and heat provided by forced hot air. This gives a positive air flow to prevent air-born lead problems. It was such a success with over sixty shooters that I decided to try a bench rest 22 league in the spring. It was also very successful with over forty shooters.

I had no idea that INTERNATIONAL RIMFIRE 50/50 even existed, but what I ran was very similar to INTERNATIONAL RIMFIRE 50/50. We used the 100 yard Hunter For Score target for scoped guns and 200 yard Hunter For Score for open sight guns. Yes, people with open sighted guns did shoot, making up about a third of participants. While I didn't plan it that way, I later found that the targets act as a realistic handicap for scopes versus open sights, not that they shot against each other, but they could. This finding could be used if a club only has a small group shooting.

I used a modified "Lewis" system for awards and this worked out very well. Those under eighteen shot as a special JUNIORS class and all of them got an award of some kind.

The largest class was Class 2, Hunter Rifle with optics. But, we had good participation in each group with, if I recall correctly, a low of seven in a class (Unlimited - Iron Sights). But every shooter counts and you should try to accommodate all of them somehow.

To get an idea of interest ahead of time, I had people sign up at club meetings before the league started. This helps you plan and order targets. Also, I had a leg up since the off-hand league was underway and interest peaked.

With four benches, and three excellent helpers, we averaged three relays per hour. Participants signed up as they arrived but they could be scheduled. Scores are recorded on the sign up sheets. Then scores are later posted on a large sheet. This really builds interest.

Having gone through this once, you might ask what I would change. To be honest, very little. I'm intrigued by the International target which could shorten the league if desired, but it doesn't accommodate the open sight shooters. Perhaps you would have them shoot at twenty five yards instead of fifty.

All in all, things went great. I accomplished my goals which were in order of importance:'

1) Conduct a safe and enjoyable league

2) Encourage shooter participation

3) Enhance shooter knowledge and skill

4) Expose them to the fun of BENCH-REST

5) Reward shooter performance

6) Make money for the club (netted about $400 after trophies and targets)

The only problem I had at first was keeping onlookers away from the benches. You deal with this by announcing what you expect and blocking off the area with tables or ropes. With novice shooters you must be specific and forceful, yet maintain fairness. Safety errors cannot be tolerated, but criticisms should be conducted without anger or demeaning comments. For any other shooter "goofs", it's best to approach them on a one to one basis and explain the what and the why of the problem.

The accompanying sheets were distributed to all participants. I strongly recommend a practice or warm up week. It will help extinguish any fears they may have, you can teach the range commands, and you can give set-up or technical help they request.

You can pull this league off even if you are the only knowledgeable person there. Of course this can be done as a one day deal, but you may not generate enough money to cover costs. The range commands are self explanatory as is the scoring. More than anything else you need the support of your club officials (which I did) and the help of some good workers (which I also had). I would be happy to lend verbal support or advice to anyone with questions. You may contact me by calling (914) 361-3779.

Best of Luck,
John E. Darney
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WALLKILL ROD AND GUN CLUB
Benchrest .22 Rimfire Rifle League

TIMES: Sunday mornings, first relay 9:00 AM. Orientation/Practice/Help Mar. 29. Commences for score April 5; also April 19, 26 and May 3, 10. Last FIVE weeks for score. Shooting ahead or make-ups accepted but must be shot in matches.

FEES: $3 per week / $15 total. 3 practice targets issued with two weeks fee.

COURSE OF FIRE: 10 shots for record on I.B.S. Hunter Rifle Target at 50 yards. 2 shots on each bull for score, sighter target provided. 10 minute time limit. Spotting scopes allowed but you must spot for yourself. Scoring as per N.R.A. smallbore rifle rules. Range officer's decisions will be final. You must shoot 5 scores to qualify for an award.

RESTS: Any sandbags or metallic rest allowed as long as not attached to the rifle or bench, no bi-pods. Any hold or seating OK.

AWARDS: One award will be given for each three shooters per class. Class divisions will be created based on participation. Three shooters per class or class is dropped. Special awards for junior shooters. Guests OK if accompanied by member.

CLASSES: All guns will be classified by the range officer. Scope setting on variables will be checked before firing. If you change equipment you must notify the range officer and be re-classified or be disqualified. If an honest mistake is made, you will be allowed to re-fire. YOU MAY SHOOT MORE THAN ONE CLASS BY PAYING THE FEE.

1) Unlimited / Optics: no weight limit, no scope limit, no barrel diameter limit.

2) Hunter rifle / Optics: 8 lb. max. weight, 4 power scope maximum, .700 inch barrels at muzzle max.

3) Unlimited / Iron Sights: no weight limit, any iron sights OK, no barrel diameter limit.

4) Hunter rifle / Iron sights: 7 lb. max weight, any iron sights OK. .700 inch barrel at muzzle max.

PLEASE NOTE: 1) You must meet ALL max. limits to make a class. 2) In optical classes, you MAY qualify for both classes by changing your scope setting.

SAFETY: Eye and ear protection strongly recommended. Guns must be cased or placed in the rack with the ACTION OPEN. No other handling of guns or loading until directed by range officer. Anyone violating safe gun handling or conduct will be asked to leave.

QUESTIONS ? ? ? Contact John Darney (361-3779)

The following are excerpts from the N.R.A. Smallbore Rifle Rules:

FIRING LINE COMMANDS

1. "Relay no. 1 on the firing line".
2. "The three minute preparation period starts now".
3. "The preparation period has ended".
4. "Is the line ready?".
5. Any competitor who is not ready shall say "Not ready on target". The range officer shall say "The line is not ready".
6. When everyone is ready, the range officer says "The line is ready".
7. "Ready on the right, ready on the left, ready on the firing line".
8. "LOAD". The range officer gives sufficient time for everyone to load.
9. "Commence firing". START TIMER
10. After 10 minutes the range command is "Cease firing - bolts open.".
11. "Is the line clear?". Instruct shooters not to touch guns.
12. "The line is clear".
13. "Go forward and change targets".
14. "Remove your equipment from the line for the next relay".

SCORING OF TARGETS

Competitors will score each other's targets, then both scorer and competitor will sign if in agreement. All questions will be decided by the range officer. Only the range officer will plug targets. Overlays may be used by scorers. Scorers shall write individual shot scores on each bull and enter the total. Range officer shall retain targets until the league ends.

HOW TO SCORE

1. The center dot is the "X-RING". Any shot touching it is scored "10/1X".
2. Shots will be scored inward, giving the highest value of a ring touched.
3. Each numbered bull should contain two shots, ten shots per score card.
4. EXCESS HITS:
    A. If shot on another competitor's target, it will be scored a miss.
    B. If excess hits on competitor's own target, shooter will receive the value of the lowest 10 shots minus 1 penalty point for every excess hit.
    C. If excess hits on one bull of competitor's own target but only 10 shots were fired, competitor receives the score of the ten shots minus 1 penalty point for each errant shot.
    D. If a shooter notices that his target has been hit by another competitor, he shall notify the range officer at once. He shall be given the option to refire or the identified shot shall not count against him
    E. If a shooter's FIRST shot strikes a bull other than the sighter, he may notify the range officer to have it discounted.
5. Highest possible score is 100 with 10 X.

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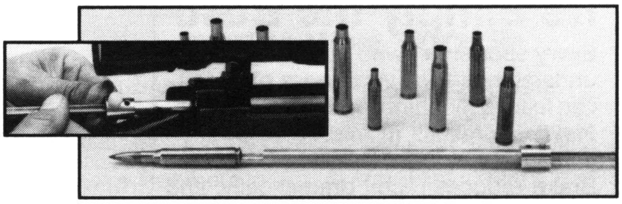

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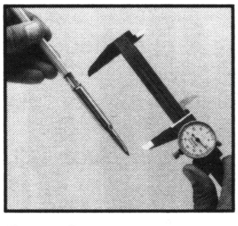

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LLOYD DE VORE (on a lot of things)

Dear Dave...

Reading the PS February issue triggered a few memories tangent to shooting.

S.E.E.

First, another esteemed shooting magazine has an article this month on S.E.E. (Secondary Explosion Effect), which makes three such articles I've seen in two months. If you decide to run an article on this subject, please don't let your writers make the mistake the other magazines have led off with... S.E.E. refers to the secondary effect(s) of a single explosion, **NOT** to either the affect or effect of a second(ary) explosion! It's tough to give credibility to studies where the author errs at the outset in identifying what is to be studied.

And, should anyone doubt it, when a rifle cartridge is fired there **is** an explosion. It's a low order explosion, a deflagration, as opposed to a high order explosion, or detonation, but still an explosion. There are usually at least two differences. High explosion gases/shock-waves travel at markedly higher rates (with markedly higher energy). There may also be a different cause of gas/shock propagation. Generally, in high order explosions detonation is the product of a chemical change which occurs all at once throughout the explosive, much as crystals form throughout certain solutions when specific conditions occur. In low order explosions in cartridges deflagration is the result of chemical change based on rapid surface oxidation.

So...studying S.E.E. from the purely **Mechanical** Engineering point of view **may never fully explain** what occurs. Maybe phenomena such as harmonic wave peaks or bullet slugging in worn throats produce the unexpected high pressures of S.E.E., but maybe a **chemical** change (so far, unidentified) occurs through the entire charge under certain conditions., thus the secondary explosion effect (pressures characteristic of detonation) in what started as a deflagration.

We know that certain rocket propellants deflagrate under well controlled conditions, but detonate under other circumstances. Just ask Martin-Thiokol! We now also know that smokeless class "B" propellants will too. If you hit a 100 lb. keg of smokeless powder with a shock of the right sort (such as a .300 Winchester Magnum slug at 3,000 f.p.s.) it will sometimes detonate. I've seen similar reports regarding 8 lb. kegs and 1 lb. cans. It may be that in cartridges, Class "B" propellants become Class "A" explosives under certain conditions of density, temperature, etc.

Incidentally, if you ever do start on this subject again, I have a letter Parker Ackley wrote me in 1966 laying out his views, which contribute to the thought that powder density/temperature are critical items. If I can remember, I'll get a copy for you when I go to town to mail this thing.

GEORGIA, And Other Strange Experiences

In the January issue, you expressed amazement anyone is still alive in Georgia. I think you've put your finger on something there! Having once lived in Georgia, at the Camp Gordon Military Police Training School, I caught a small touch of the plague Frank Randall describes. It incubated until I left the Army & bought a small 320 acre farm in Oregon (1963).

My farm was pretty much surrounded by a national forest on all sides, and had good hunting as well as cutthroat, steelhead & salmon fishing right on the place. If that wasn't enough, you could walk off over the hills into half a million acres or so which was even better.

I kept a dozen rifles on three wall racks in the living room, overlooking about 10 acres of bottom land pasture, with woods immediately beyond. About 200 yards into the pasture was a white painted rock a bit smaller than a soccer ball. Each time I passed through the living room, I'd grab a handy empty rifle, throw it quickly to my shoulder and practice a "snap shot" at the rock through the venetian blinds.

One rifle was kept with a loaded magazine...a 20" barreled pre-'64 .375 H&H Model 70, with G&H 2-Lever side mount and post reticule Weaver K-2.5. My "brush, bears, & repel borders" gun.

As such things happen, there came a

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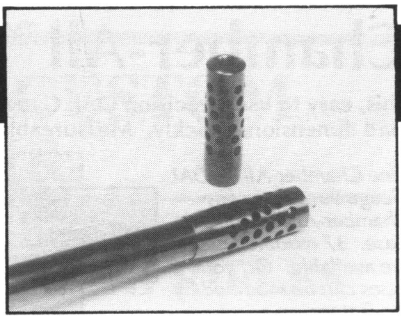

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day when my wife was not pleased with me. She had been roasting me, one side at a time, in the kitchen. When I began my retreat through the dining room, into the living room, heading outside, she followed...nattering like an old Lane one-man saw mill working through a knotty hemlock full of burls & pitch. Habit being habit, on the way I grabbed a handy rifle and snapped a shot at the rock in the pasture.

It's a tad disorienting when you snap shoot a 20" barreled .375 H&H in your living room, so after the shot there was a momentary dead silence. In that moment I was thinking at warp speed, Mr. Editor! Looking at Judy's jaw hanging in amazement, I was inspired. I turned as calmly as I could, looked her right in the eye and said slowly, "Now, are you through?"

Her eyes widened with new understanding, and she went back to the kitchen. That night I had my favorite dinner, homemade Spetzla. I took the window into town the next day to have the glass replaced. There wasn't a shred left in it but, luckily, I shot between the open blind slats.

And, now at last I know that damned fool incident is all because I **had** lived in Georgia. Thanks, Frank!

WHAT, MORE?!

I know this is taking a lot of your time, Dave, and I apologize. But, I thought maybe you could read it all in a couple of years, and when you're done you'll realize why they say "truth is stranger than fiction".

After leaving the farm, going to grad school, and becoming Assistant to the City Manager of Springfield, Oregon, I got recruited to the Alberta, Canada, Government. Hence the tale of my first successful Moose Hunt.

It was 1969 and though I had been in Alberta over a year and had a Class "B" Alberta Guide license on the side, I had never pursued the wiley moose. Neither had one of my co-workers, Jerry Pauls. So, in the manner of 30-year-olds who **all know** how to make the world work, Jerry & I decided to go moose fetching together.

We got a topo map from Lands & Forests. Jerry had never even been deer hunting, so it was left to me to pick a place to hunt, based on the topography. After all, a moose is just a big deer, right? I knew how to find deer using Oregon topo maps...

We left Edmonton at 3 a.m. one Saturday, driving north over 125 miles of paved, then gravel, then dirt road to Fort Assinaboine, on the Athabasca River. We crossed the river at Ft. Assinaboine and bore west-by-southwest. It was our plan to drive the few miles until the "road" ended and hunt the seismic cut-line from the end of the road, through some small valleys with beaver ponds, back to the river.

The byway which we were now travelling at about 15 m.p.h. traversed very small ridges about 400 yards apart, each barely high enough to conceal a mature moose. Jerry had the map out and was counting ridges to where we planned to hunt. Finally he said, "When we top this one, we should see the end of the road." He was partly right. When we topped the ridge, we did see road's end. And, in the middle of the road, between us and the start of our hunt, stood a full size, adult bull moose, complete with attached hat rack. Never at a loss for words, I said "Well, there's your moose, Jerry", and stopped the pickup.

Jerry got a bit excited. After forever-plus-a-week, he couldn't get his gun case unzipped, let alone get his .303 SMLE out and loaded. So he said, "You shoot him". I unzipped the case of my new Brno 7x57 ZKK 600, hauled it out, and thumbed in several rounds loaded with Hornady 139 gr. spire points. The moose watched this operation with evident interest, and patience. Opening the door, I got out and took a rest between the door and cab. Señor moose was directly facing me, and he sure looked narrow through my 2-3/4 power Meopta scope with the fat European-style post. I was deathly afraid I'd miss the 200 yard shot. So I yelled, "Turn sideways!"

Apparently the obliging sort, Mr. Moose turned 90 degrees to his right and posed nicely for my first shot. It had no apparent effect, but the moose seemed to think I wasn't seeing his best side, so he slowly swapped ends and stood looking at the other side of the dirt track. I shot again. Still no visible affect on El Moose. I got back in the truck, behind the wheel. "Heck" (or maybe "drat"), I said. "Either he's dead and doesn't know it, or I'm missing. Either way there's no sense in more shooting."

Jerry & I sat in the truck watching the moose for at least a minute. Then he fell over dead.

Examination showed both shots had hit the moose close behind the shoulders of each side, penetrated the chest cavity completely, and exited in the general direction of the Athabasca River. For all I know they are still going. Needless to say, we shared the 600+ pounds of butchered meat, and Jerry Paul was convinced I was the world's greatest moose

Continued on next page

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LLOYD DE VORE

Continued

guide. We hunted together three more times and in turn I became convinced he was a lucky charm of the very best sort. I got a moose each time within an hour or so of starting to hunt, usually as the result of Jerry spotting one on a cut-line/road I picked off a map.

MY FIRST GOOSE HUNT

The only stranger hunting story I've ever heard is another personal experience. In '73 I became Director of Personnel Services & Staff Training for the Province of Saskatchewan public service. If no one has ever told you, Saskatchewan is Mecca for waterfowl. Duck hunting is so easy it isn't even much fun. A friend (and former Canadian Smallbore Champion) Barry Gwillam and I once killed 28 ducks with 5 shots each, shooting over his barley field. Geese could be seen in flocks of 4,000 or more.

In 1974, Grady Koester arrived from Ontario to become personnel director for the department of agriculture. He had never been goose hunting and neither had I, so we decided to take a few days and remedy that cultural disadvantage. We chose to hunt near the western Saskatchewan border with Alberta along the south side of the South Saskatchewan River, primarily because of the abundance and variety of game there. It is no big trick for a good shot with a dog to shoot limits of ducks, geese, pheasant, hungarian partridge, and ruffed, sharptail, and sage grouse anytime they want during the fall season. There are giant whitetail and mule deer in the same place, and all the seasons are open at once.

The road from Regina to this hunter's Valhalla stretches a couple of hundred miles, first west through Moose Jaw, then Speedy Creek (local slang for Swift Current), then north curving to west through dying small towns such as Leader, Lancer, Sceptre, etc. In each small town is a hotel which exists solely because you can't get a tavern license in Saskatchewan unless you have rooms for the overly-imbibed to rent. So, hotel rooms were about $6 per night and you had your pick of every room.

American Single Shot Rifle Association

Dedicated to shooting and collecting old cartridge target and buffalo rifles, the ASSRA documents the history of the benchrest tradition in America publishes a bimonthly journal, and maintains archives of shooting history for use by arms researchers. Membership is $20 per year ($26 canada, US funds.) Write for a sample journal and more information.

Gary Staup, Sec.
709 Carolyn Drive
Delphos, OH 45833
(419) 692-3866

Grady & I made the drive, and put up for the night in Sceptre. The inn-keeper played pool and drank beer with us, then made our lunch for the next day, and gave us a few hints where the geese might be feeding the next morning.

For those who haven't hunted geese, there are two basic methods, "pitting", and just lying in the fields well concealed. Pitting was out for us; the ground was frozen. Both require knowing where the geese are going to feed. The geese sleep the night on open water so they can be free of predators, then just after dawn they fly to some obliging farmer's wheat crop and put on fat for their future trip south. After harvesting a few hundred dollars worth of the farmer's grain they fly back to open water for a nap, then sally forth for the afternoon repast. Days are short, and the feeding periods may only be about 4-6 hours apart.

The next day Grady & I began to scout in earnest, using binoculars from the low, mostly treeless, hills to find the geese. The morning was not too successful, but early in the afternoon we topped a small hill on an abandoned farmstead four miles northeast of Sceptre and beheld a virtual Currier & Ives painting of the successful Saskatchewan goose hunt. Between us and the river about a mile farther north were several hunters hidden in low sage brush circled by lush, newly-mown wheat fields. It was an overcast day with just a promise of snow, and the geese were trading back and forth from the river in groups of two to six. The hunters were bagging one or two at a time with regularity.

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We parked my new red & white GMC Jimmy between some abandoned granaries on top the hill and got out to watch through our glasses. I put on my blue parka with wolverine trimmed hood to ward off the cold southwest wind, and we watched, fascinated, for at least two hours. Between 4 and 4:30 p.m. dusk started falling and a pickup appeared from a patch of willows near the sage. It drove to each hunter in turn and collected both shooter and geese.

The only way out for the hunters was on the road we came in, so we decided to ask if they planned to shoot the same area the next morning. If not, we would chance the geese returning, and be there ourselves. We fired up the Jimmy and drove it out into the one lane rutted road facing the hunters as they started uphill toward us. Both of us got out of the rig and stood in front of it. When they were within about 25 yards, I held up my right hand to stop them, then walked over to their driver's door. "Hi", I said, "We've been watching you all afternoon. Looks like you've had quite a shoot."

"Yeh", the driver replied as they got out, "Would you like to see our geese? "Sure", I replied. We all walked around the pickup, which was loaded with 20-30 Greater Canadas, a Snow, and a couple of Speckle-bellies. I looked at the geese and then asked "Do you fellows plan to be back here tomorrow morning? "No, no", the driver said. "We've got our possession limit and we're heading home." (Goose limit was 3 per day/6 in possession.) I was still admiring the geese. Then he said nervously, "Eh, Would you fellas like some geese?" When we said yes, they counted out three of the larger ones for each of us and helped put them in the Jimmy. We thanked them and they drove off. We waited a few minutes, then started back to Sceptre.

Halfway to town we were still talking about those friendly hunters when the lights came on in our heads, just like in the TV ad. Issue patrol cars for rural Gendarmerie Royale du Canada (RCMP) were red & white Chevy Blazers, identical to my GMC Jimmy. My parka was the same as those worn by the Mounties. Even my bench rest partner Jim Somers, head of the RCMP ballistics lab, had remarked on it. Then we started to laugh. Somewhere in Saskatchewan there's probably still a group of goose hunters who tell their buddies about the time the RCMP caught them over the limit, but let them go when they gave the officers some geese!

And we each "got our limit" on our first day of goose hunting without firing a shot.

THE END?

Dave, I didn't write this stuff expecting you'd print it. If you want to, fine, do whatever you want with any or all. But, I know that these things need to be held to 2 pages for articles. I just thought you might enjoy a few "real life" tales that inevitably happen to us all if we shoot long enough.

And, that's the truth!

Best wishes,
Jose Gonzáles O'Toole
aka Lloyd de Vore

N.B.: The attached picture is of me and the moose in this letter. I never realized just how big moose are 'til then. Compare the length of the rifle with the legs of the moose. Or, compare me with the moose. I was (and am) 6'-3" and weigh exactly 15 Stone.

December 6, 1966

Mr. Lloyd G. De Vore
616 Sherwood Drive
Norman, Oklahoma

Dear Lloyd:

Increased headspace with rimless cartridges is very common with reduced loads. But, I doubt if this is involved in the detonating problem when using reduced charges of slow burning powders because these things occur when the headspace is minimum. At least, I am satisfied that it occurs although, many others disagree mainly because of the fact that it is very difficult to reproduce this thing experimentally and, very likely, the reason for that is if you figure out the number of shots fired in the United States each year as compared to the number of incidents involving reduced charges of slow burning powder, it is easy to see why this occurs only once in millions of times. But when it does occur, the shooter is at once a believer. It appears that the powder has to assume some particular position in the case, very likely caused by carrying a rifle all day with the muzzle down, causing the powder to become fairly well compacted directly behind the bullet. Norma Factory believes in a different theory to the effect that a reduced charge of powder gets evenly distributed over the bottom of the cartridge case, thus increasing the burning surface which naturally speeds up the reaction. My own theory is that it is due to sort of a hang fire. That is, the pressure of the primer and a slight burning of the powder at the rear, pushes the powder charge tightly into the shoulder and throat portion of the chamber to create a hard mass which actually plugs the barrel behind the bullet and then, when the charge detonates, it takes the path of least resistance, which is the brass case. We have had several instances which tend to prove this theory. These were what we thought were misfires but when the bullet was removed, the powder was so hard in the case that it had to be dug out with a nail and when the powder charge was completely removed, it was found that the back end of the powder charge was partially burned but had failed to completely ignite. Your theory is probably as good as any other one and I am filing your letter for future reference since this theory is a lot more sensible than some I have heard, especially the one that such a reaction never occurs. DuPont flatly states that they have been able to create this reaction in the laboratory. I made the barrels for them and they were chambered for the Improved .25/06 which has been one of the worst offenders, perhaps, because it has a very sharp shoulder and a relatively long powder space.

Yours truly,
P.O. Ackley

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AN INEXPENSIVE AND EFFECTIVE DAISY WHEEL WIND VANE (WINDFLAG)

by

Jerry Schaefer

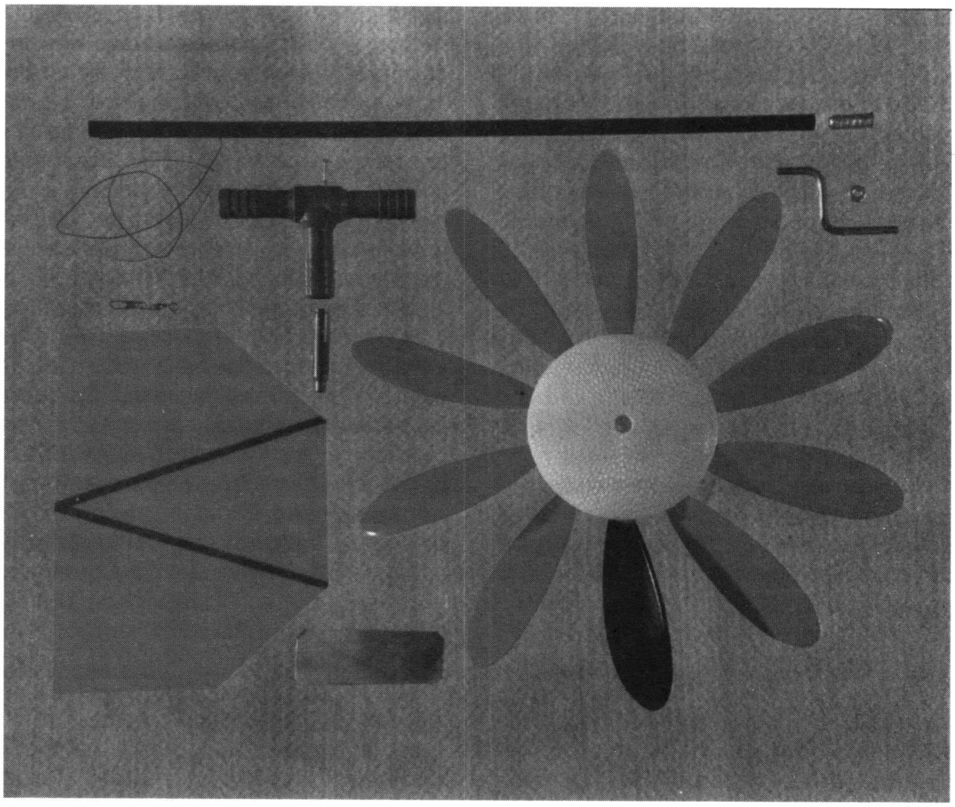

Fig. 1. Major components of a flag. Spiraling clockwise from the aluminum arrow shaft, arrowhead insert, 8-32 nut, wheel shaft, daisy wheel, aluminum reinforcement, vane, snap-swivel, casting line, 1/2 x 4 sheet metal screw, plastic tee, .223 Rem. cartridge case.

I do not exactly consider a differently designed windflag to be on the penetrating edge of improving precision shooting. However, other competitors often inquire at matches about my flags and thus I would like to share my design with anyone interested. I have no intention of producing the flags for sale (although I have been asked to). Because of the light weight of this flag and the leverages involved, with a relatively small vane mounted on a long lever and the daisy wheel on a lever close to the fulcrum, there is maximal tracking and quick response to changing wind conditions when the flag is properly adjusted. A complete flag weighs about 125 grams (4.4 oz.) and is 21 inches in total length. Heavier flags with large surface area vanes are less responsive in quickly shifting winds. The flags are of a size easily viewed in the scope field beyond 100 yards. Flags of my design can be produced for about $2.00 each and they are reasonably durable. I leave them set up year-round on my home 100 yard range in whatever weather southside Virginia cares to inflict on them, and they easily last several years under those conditions. The major "cost" items for a flag are the daisy wheel (97¢, I favor the light 10-blade model available at Wal-Mart), the tee connector (49¢, at a wholesale building supply plumbing department), screws and nuts (6¢, at wholesale building supply) and the vane (5¢, polystyrene meat tray from a local grocery). That is the princely sum of $1.57. Spray paint, glue sticks, surveyor's tape and other miscellaneous items are necessary but add minimally to the cost per flag. The other items for constructing the flag are salvaged. I get slightly damaged aluminum arrow shafts at no cost from bow shooters, aluminum drink cans from the trash, fired .223 Remington cases at the range, etc. You have to innovate your own scrounging grounds. If you empty your own drink cans of the Pearl-pop-with-the-foam-on-top variety as you proceed with construction, the chore may seem more enjoyable. The following materials and supplies lists and step-by-step instructions will seem lengthy, but a flag can actually be assembled in little more time than it takes to read and understand the directions. I will describe the fabrication of a single flag, but I construct them by sets in an assembly line fashion to save time. I use a set of four flags for 100 yards and six for 200 and 300 yards; you use whatever you prefer.

MATERIALS NEEDED (see Figure 1)
- aluminum drink can
- arrow shaft, aluminum tube
- braided nylon fishing line, 30#
- cold-rolled steel, 5/32"
- insert, arrowhead, 8-32 thread
- nut, 8-32
- sheet metal screw, 1/2 X 4
- snap swivel, size 14
- Styrofoam, 8 X 11X 3/16"
- surveyer's tape
- tee, plastic connector, 1/2"
- .223 Rem. cartridge case

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- electric drill
- emory wheel, electric
- hacksaw, fine-tooth blade
- hot-glue gun
- hot-glue plastic sticks
- marker, felt tip, black
- masking tape, 1/2 wide
- paint, spray and can enamel
- pliers, household
- razor knife
- screwdriver, small flat blade
- thread die, 8-32
- tin shears
- vise

ASSEMBLY INSTRUCTIONS

1. Paint each side of the Styrofoam sheet a different color of your preference for visibility on the range (I like bright tractor yellow for a wind from the left and fluorescent red for right). Some brands of spray paint will, due to the solvents, blister the Styrofoam and others do not. If applied in several thin coats, with several minutes drying time between, blistering will be minimal. While the paint is drying, proceed to the other steps or paint a bunch at one time and allow to dry in storage for later use. Use the razor knife to cut the paint-dry Styrofoam into two 5-1/2 X 7-1/2 inch vanes and bevel as per Figure 2. A. Use the felt tip marker to distinctively identify the vane with your own design (I use a "V" pointing in the direction of bullet impact on the target), name or initials, etc. I also paint one or more of the daisy blades black (after degreasing with carburetor cleaner or lighter fluid) or some other contrasting color at this time. I prefer gloss enamel on a brush rather than spray paint for this.

2. Use tin shears to cut the aluminum can into approximately 1-1/2 X 3" strips, stack together and bevel the four corners. Bend an aluminum strip into an equisided "L" shape with the bare aluminum on the outside and the manufacturer-painted side on the inside. Bend the aluminum "L", paint-side in, around the center of the windward edge of the vane and lightly trace its outline on both side of the vane. Apply hot-glue in a thin bead to the inside edge and to the center on one side of the outline on the Styrofoam vane and press the aluminum onto the vane. Be sure it is centered. The glue is hot enough to produce a second degree burn on skin, so use caution in handling. When the glue has cooled for a few seconds, press the aluminum against a flat, cold, metal sur-

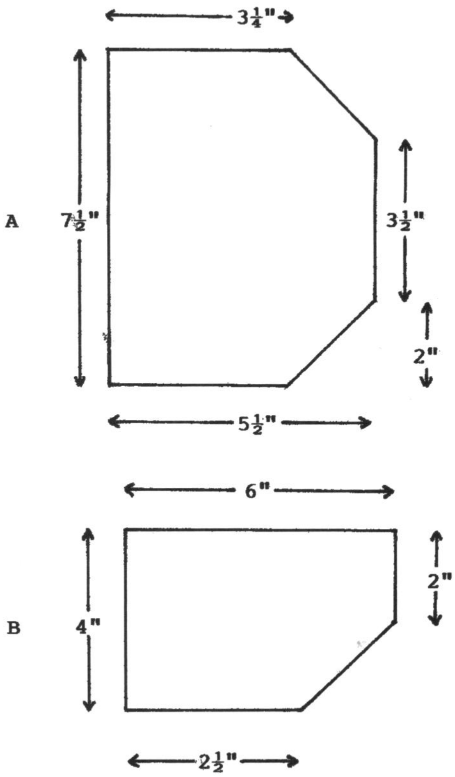

Fig. 2. Vane Dimensions
A. Daisy wheel flag
B. 100 yard flag

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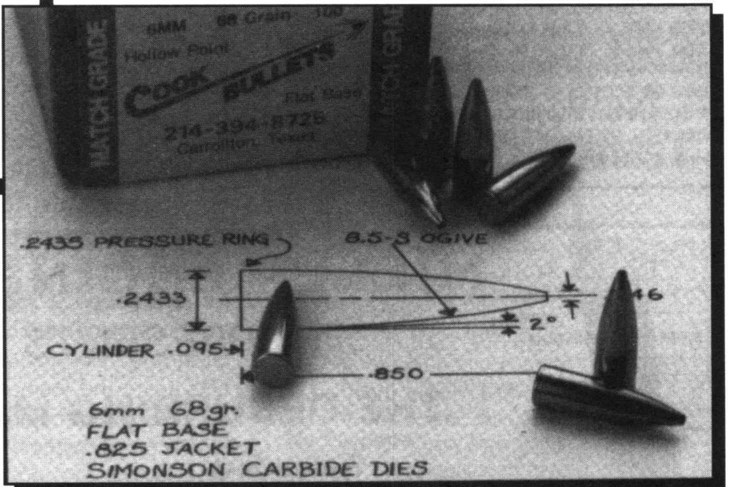

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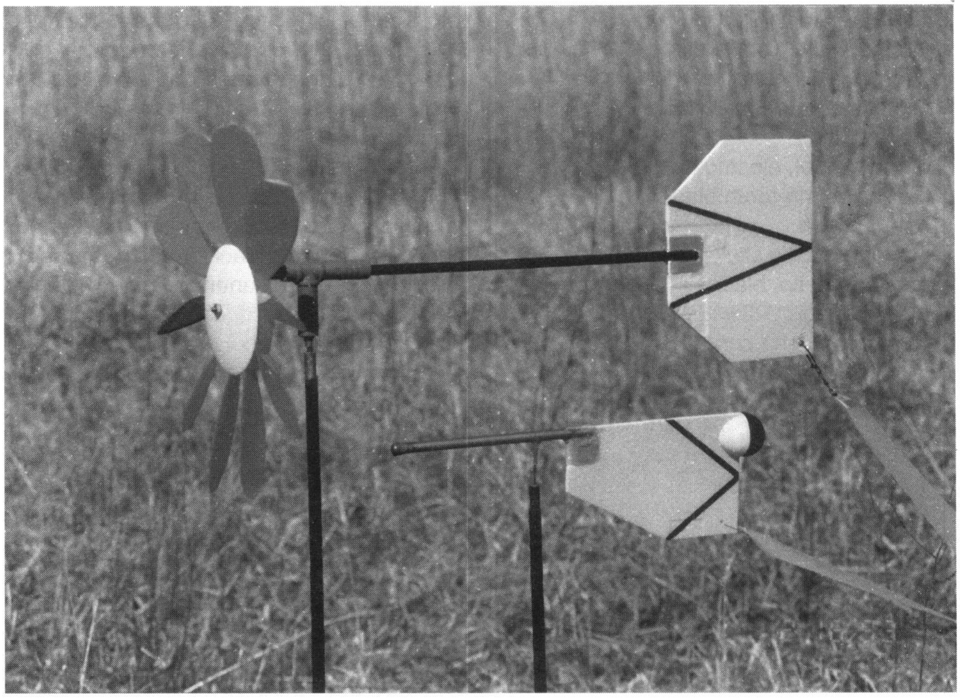

face from the Styrofoam side and hardening of the hot-glue will occur in seconds. In like fashion, apply hot-glue to the other side of the vane to affix the aluminum to the other side. The Styrofoam vane will break easily upon flexing without this light, but strong, aluminum reinforcement.

3. Use a sharp point (a ballpoint pen will do) to pierce a hole through the rear, lower edge of the vane and insert a loop (double strand) of braided casting (fishing) line or strong thread through the hole and tie the ends with a square knot. A dab of hot glue on the knot and cut ends will prevent unraveling of the braided casting line or the knot. I use a length of surveyer's tape (as long or short as you like) for a "tail". I fold-over about an inch of one end and thread nylon line through a hole punched through the several layers of tape and knot it to a small snap swivel (size 4 or 5) designed for fishing. I use the snap swivel to attach the tail to the loop on the vane. Then I can switch long with short tails at a match without cutting the long ones (which eventually become too short and have to be replaced; I hate tying those tiny little knots any more than I have to). I also prefer to press a shoelace eye (available at hobby shops, along with the pliers-like tool) in the vane to reinforce the hole that holds the loop for the tail. Without this, although not necessary, the wind-whipped tail will eventually pull the nylon loop through the Styrofoam.

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4. Use the hacksaw to cut about 1-1/2" off of one arm, not the leg, of the plastic tee. This will permit positioning the daisy wheel close to the fulcrum. I then chamfer and deburr the cut end with the knife blade. Drill a 1/8" hole centered in the top of the tee opposite the leg and partially screw in the 1/2 X 4 sheet metal screw. This will eventually hold the arrow shaft in place and permit fore and aft movement to balance the flag. Size, deprime, chamfer and deburr a .233 Rem. case. Chuck the 13/64" drill bit in the drill and insert the bit through the .223 case mouth to deburr and bevel the inside of the flash hole for the pivot pin to center in. Be careful not to drill through the flash hole. Wrap masking tape tightly around the case just above the base and then below the shoulder until the taped case will slide smoothly, but centered, inside the leg of the tee. With practice, you will know what length of tape to use. Apply hot-glue inside the mouth of the tee leg and quickly and firmly press the case, base first, into the leg to a depth such that most of the case neck is extending outside the tee but part of the shoulder of the case is just below the mouth. Apply hot-glue to the tee mouth/case shoulder junction and allow to harden. This device will be your flag pivot.

5. Cut the arrow shaft into two 14 to 16 inch (depending on the length of the arrow) pieces. Place the piece with the threaded arrowhead insert in the vise and clamp firmly with cloth or other padding (another flag can be made with the other piece after an insert is glued in place with hot-glue and the nock removed). Use the Dremel cut-off wheel to form a longitudinal slot, in the end opposite from the insert, that is about 1 inch deep and 3/16" wide. Insert the aluminum reinforced vane into the slot, center and level it by eye, and glue in place with hot-glue. Be sure any holes that could admit dew or rainwater to the shaft interior are sealed with the glue.

6. Cut about a 3" length of 5/32" diameter cold rolled steel rod (the Wal-Mart 5-blade daisy wheel comes with 2/16" steel rod, which is too thin; many other stores sell the heavier 5/32" rod on their daises). The exact length will depend on the thickness of the hub on the daisy wheel. Use the vise and pliers to bend the rod into a right-angled "Z" shape with a short (about 1/2") arm for the insert and a longer (about 1-1/2") shaft for the daisy wheel hub and with about 1" of drop between them. The drop for the daisy wheel shaft will allow the flag to "ride" and balance on the pivot pin and prevent torque from the wheel from dislodging the flag from it. Deburr and slightly bevel the ends of the rod on the emery wheel. Replace the bent rod in the vise and thread about 3/8" of the short arm and 1/4" of the hub shaft with the threading die. Check to see that the wheel can turn freely on the shaft

without binding when the nut is threaded on.

7. Slide the insert end of the arrow shaft through the tee arms first, then screw the short end of the threaded rod into the insert tightly. If it is out of line, heat the arrow around the insert until it will rotate so that the dropped hub shaft is aligned with the bottom of the vane.

8. Balance the daisy wheel by clipping blade tips. I slide a rod through the hub first and hold the rod parallel to horizontal. The heavy blades, to be clipped, will rotate groundward by gravity. Slide the hub of the balanced daisy wheel over the shaft and secure tightly with the 8-32 nut. A few drops of Rem-Oil or other light lubricant on the shaft will permit smooth rotation of the wheel. Attach the tail if not already in place.

9. Hold the flag by the protruding sheet metal screw, or loop a string around it, and slide the flag shaft fore and aft in the tee until the flag is slightly, but distinctly, tail heavy rather than balanced. Lock the shaft in place with the sheet metal screw after the vane and dropped hub shaft are aligned with the rod. I carry a coin-type screwdriver in my pocket at matches for emergency locking or adjusting imbalance of the flags.

10. I make pivot pins from the 5/32"steel rod. Cut about a 5" piece; bevel one end and grind the other to a point at a slightly more acute angle than that of the drill bit used to chamfer the flash hole of the .223 case. Insert the point into a .223 case and mark the rod about 1/4" from the case mouth. Tightly wrap masking tape around the rod in layers below the mark. Slide a 5/32" inside diameter metal washer over the beveled end and secure tightly with another layered ring of tape. The diameter of this and the next layered ring of tape should be such that it will slide easily into the tube of the flag stand you want to adapt it to. Now the washer is sandwiched between two rings of tape which can be reinforced with hot-glue or Superglue if necessary. The third ring of tape goes around the base of the pin so that it will not wobble in the stand. A few drops of light lubricant on the pin and in the beveled flash hole (brass is also self lubricating) will allow a low friction pivot.

I transport the flags to and from matches with the pivot pins and daisy wheels removed. The flags without wheels fit flat in an appropriately sized plastic or cardboard box where I also store the pins, various length tails and a small container of Rem Oil. Damaged flags can usually be repaired at home with either heat or hot-glue. I keep spare vanes on hand for that purpose.

I use a smaller flag centered just below the target frame at about 70 or 80 paces on the 100 yard range. It is only about 12" long and totally visible in the bottom of the scope field of view. Some construction steps are similar to those described above for the daisy wheel version, so I will be more succinct about assembly. Cut a 6-1/2" length of arrow shaft and cut a 1 X 3/8" slot on one end for the vane. Drill a 1/8" hole on the bottom-side of the shaft perpendicular to, and one inch ahead of, the deep edge of the vane slot. A 1" length of 1/8" diameter copper tubing (available at auto supply and hardware stores) will serve to hold the pivot pin. Chamfer and deburr both ends of the tubing with a knife blade. Grind flat the end of a steel or brass wire that is slightly larger than the inside diameter of the tubing, then taper grind the outside until about 1/8" of the wire can be inserted into one end of the tubing. Crimp the wire in the tubing and cut close to the end of the tubing with wire cutters. Lightly grind the end with the wire until flush with the tub-

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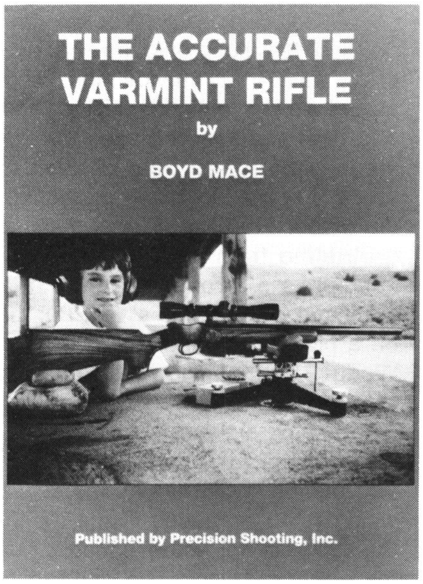
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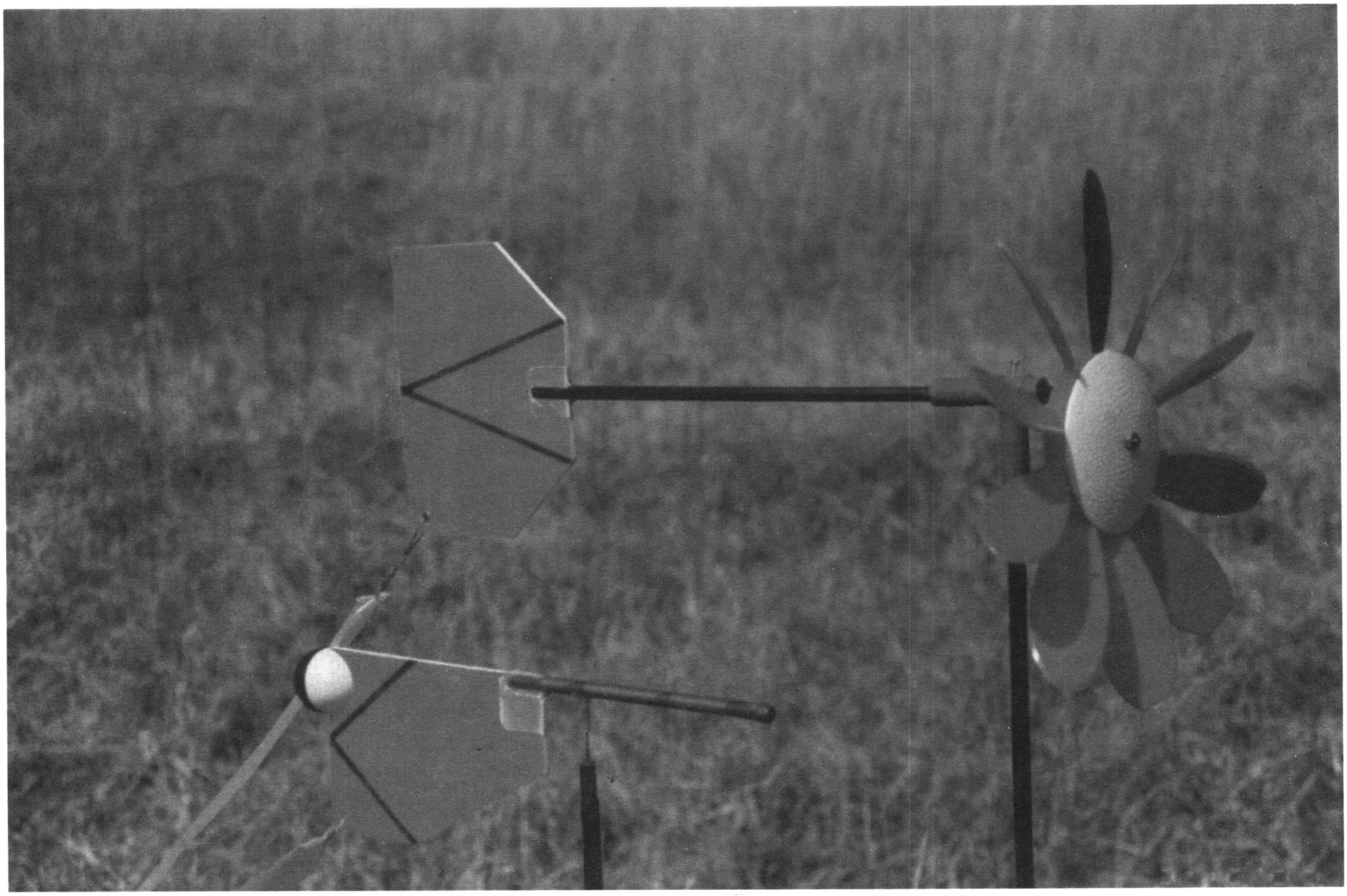

DAISY WHEEL WIND VANE

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ing and slightly bevel the outside end of the tubing. Put a dab of hot-glue in the 1/8" hole in the shaft and insert the wire-plugged end of the tubing. Hold the pivot tube in line with the vane slot and perpendicular to the shaft (it can be slightly repositioned later, if necessary, by heating) until the glue hardens. Add more glue to the arrow shaft/copper tube junction. The vane is previously painted Styrofoam cut to 6 X 4", beveled on the bottom leading edge only (see Figure 2. B.), reinforced with aluminum, and hot-glued in the shaft slot. It is important that the top edge of the flag be flat to not obscure the target when positioned just below it. A 12 to 16" tail is adequate (mostly out of scope view anyhow) and tied with casting line directly through a hole in the bottom, rear edge of the vane (no need to switch tails with snap swivels). I also paint one hemisphere of a ping-pong ball black by dipping it in enamel paint. Cut a slender "X", about 1/8" wide at the top and bottom, in the unpainted hemisphere. When squeezed from the ends of the "X", the ball can be slipped onto the end, top edge of the vane. It will provide more wind drag as well as aid you in identifying head, tail, and quartering wind angles through the visually flattened field of view of the scope. I use a laboratory dissecting needle (about 1 3/4" of slender steel needle protruding from a 1/4" diameter wood handle) as a pivot; wrapped with tape it will insert into the flag stand. Put the flag on a pivot held parallel with the ground. Wedge, by trial and error, egg-shaped (3/16 to 1/4 oz. swivel-type work well) lead fishing sinkers into the open windward end of the shaft to imbalance the flag distinctly tail-heavy. Other smaller weights can be added inside the shaft if the sinker is not heavy enough. Hot-glue the weights in place. The little flag can be put together in minutes using, with the exception of the few above identified items, scraps and discards from constructing the daisy wheel flags.

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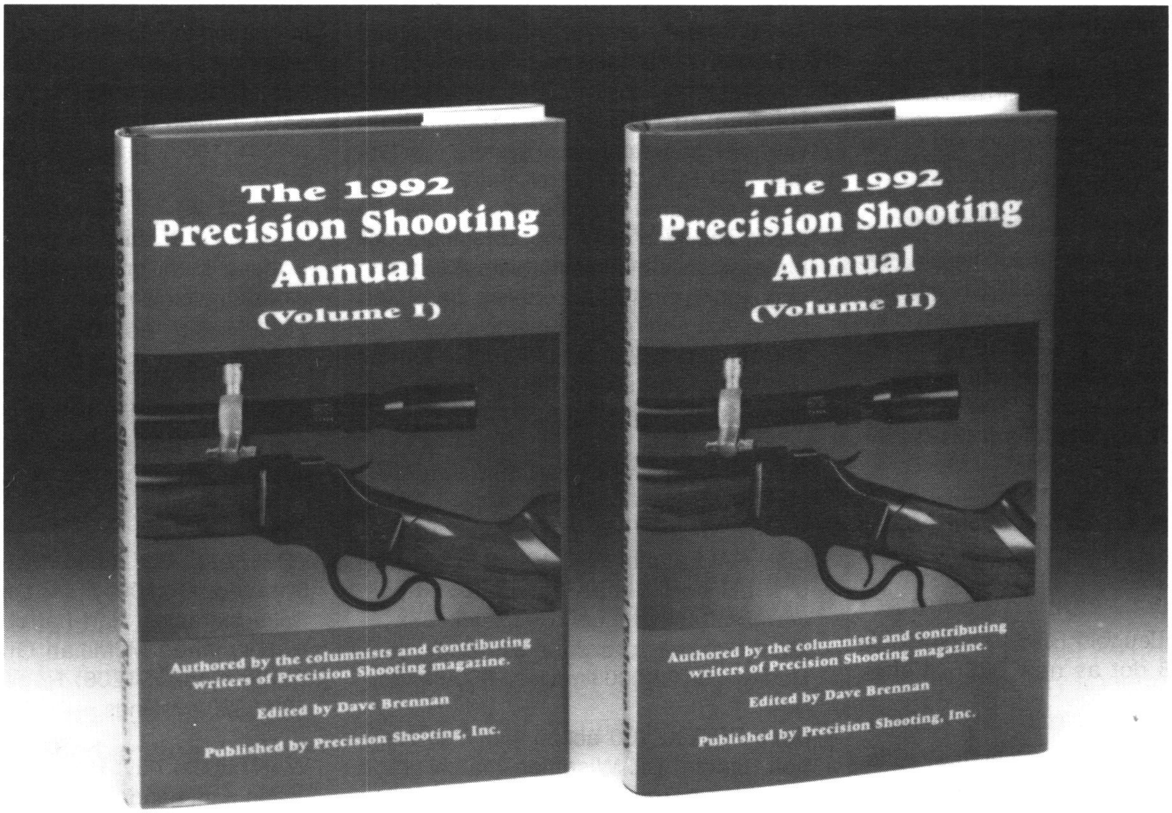
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FOR SALE: Leupold BR 36x adjustable objective 1/8 dot as new $385. I ship. 715-822-4004.

FOR SALE: 22 PPC Bench Rest Rifle. Smithed and stocked by Seely Masker. Remington 700 action, Hart barrel - hunter weight and bead blasted, McMillian hunter graphite stock (metallic green Imron), Canjar light pull trigger. Rifle is in beautify condition and comes with Masker nutcracker dies, Forster Benchrest dies, and 25 Sako-220 Russian cases. Asking $1275.00. Call Ron Scott (508) 476-3686 eve's.

FOR SALE: Hunter Class Rifle, Rem. 700 action, Hart SS BBL, 1-14, .308/.333NK, Hart 2 oz. trigger, H-S Precision stock in dark grey, Burris 6X HBR w/.375 dot in lapped Redfield rings and bases, brass and Wilson dies included. Completely accurized, smithed and stocked by Larry Smart. $950.00. Winchester Model 71's, .348, (1) Deluxe at 97%, Win. swivels, Lyman 66 sight, ser.# 446XX (1956). $975.00 (1) Standard at 99%, ser.# 450XX, (1956). $1150.00. Also new brass, Factory ammo and dies. Jim (414) 923-4217 after 3:30 P.M.

6PPC Light Varmint, Stolle Panda, right bolt right port, candy apple red stock, 19 Russian cases, Leupold 36x and all accessories, $1250. Alan 515-233-5713.

ESTATE SALE: Lyman 6X-SL NIB $225, Weaver T6 $175, Lyman 8X-SL NIB $200, Lyman 10X All American NIB $200. Brass per box, Federal Nickel, 6x47 $15, 222 $9, Remington 308BR $9. Remington 37 with Hubalek barrel and prone stock $450. Richard King 817-265-0118 eve.

New .220 Russian cases. New Sako 6PPC U.S.A. cases, thin base. Make offer. (601) 435-4882.

Remington Model 700 Custom light varmint rifle switch-barrel system with factory .223 Rem 24" barrel and 21" match grade s/s barrel chambered and fitted by David Tooley in 6x47 Imp. Beautiful stock professionally oil finished with 20 Lpi cut checkering and fitted english pad. Hart barrel vice and receiver wrench, 6x47 Imp Wilson dies, 223 dies, 350 rds fire-formed 6x47 Imp brass and 600 rds 223 R-P brass. $745. Tim (804) 826-2919.

Sinclair arbor press ANIB $54. Tim (804) 826-2919.

FOR SALE: 6mm PPC 10 1/2 lb, Hall RH bolt LH port Shilen barrel .261 neck, Jewell 1 1/2 oz trigger, Hall stock, 36x silver Leupold, and dies smithed by C. Hammonds $2,000 firm. 412-869-8474.

6mm PPC XP100 action with 700 Rem. bolt handle, Bill Wiseman match grade stainless barrel .264 neck, 2 oz Shilen trigger, 36 power Leupold scope, Fajen bench stock, pillar bedded also H.S. Precision stock included, gun fired only 40 times to form brass with are included, $1250.00 firm. William Drexler, RFD #2, Box 400, Brooks, Me. 04921. 207-722-3695.

FOR SALE: 51-1/2 gr. .22 cal. bullets, hand swagged in Rorschach carbide dies. This lot of J-4 jackets and this set of dies produced the bullets which won the "93" N.B.R.S.A. Light Varmint Nationals. I purchased the dies and J-4 jackets from Mike Prokosch of P.C.B.C.: $110.00/M Frt. Paid, while they last. Contact: R. G. Robinett (515) 795-2906.

TRADE - Win M70 Pre-'64 original "7m/m" Mauser caliber standard weight rifle (1947), metal 80% outside, 99% inside. Also have as new Tikka .308 bolt Sniper, small collection S&L Free Rifles, other exotic rifles/scopes to trade for BR rifles, equip. WANT Stolle Panda RPRB action, new Hart 6mm blank and good used BR scope/Kelbly rings, or best similar BR rig. Lloyd, Box 5078, Roseburg, Oregon 97470. (503) 673-5442.

WANTED: 30/416 Rigby or similar with accessories. Lee Mueske, (406) 782-1239.

WANTED: Target Model Lee Loader for 25-06. R.C. Smith; 1193 E. Vanderbilt Ct Sunnyvale, CA 94087. (408) 732-6758.

Sako L 461 .222 Remington heavy barrel, very good to excellent condition, with dies and brass, $400. B&L 6x24, new condition, $300. Leupold 36x, new condition, $400. Lyman 8x All-American, good condition, $100 or best offer. 606-365-7305.

WANTED: Scottish manufactured H-322. Prefer 8 lb. or greater single lot, will consider smaller amounts. Jerry, Rt. 1, Box 113, Meherrin, VA 23954. (804) 736-8230.

FOR SALE: Range Finder, Barr & Stroud, one metre base, upper image inverted, scale graduations 150 to 10,000 metres. (717) 726-3264.

FOR SALE: H.V. 6mm B.R. Half Octagon Sleeved XP-100, R.H. bolt, L.H. port, Sako extractor, Hart barrel, Hart trigger, Hart smithed McMillan Graphite Arctic Camo stock. $1200. Roger Amos 304-863-6830 evenings.

WANTED to buy: Remington model 700 action right hand, 308 bolt face, right port. Call (415) 543-2893 daytime only. Ask for Martin.

"State of the Art" LV/HV .060 Short 6 BR, Hall action, Hart bbl (99 rounds fired) Graphite stock w/weight system, Jewell trigger, w/cases and dies, as new $1375. Heavy Varmint 6PPC, Trophy SS action, 2 Hart bbls., McMillan graphite stock, new paint, exc. $1225. HV/Cruiser 6PPC, sleeved/accurized 700 Rem w/custom Burns coned bolt, 2 Hart bbls, fiberglass stock, Shilen 2 oz. trigger $925. Hunter class 3/4 x 308 (1/4" short 308) Rem accurized 700 action, Shilen SS bbl., fiberthane stock, pillar bedded, Shilen 2 oz. trigger, includes dies/cases $835. Bob 1-201-663-5159.

.22 PPC Sako from Accuflite, Canjar set trigger, McMillan Fiberglass stock w/Sako rings, absolutely flawless. Includes Neil Jones micro dies & brass. Must sell - building custom gun, $900.00 R.K. Powell (205) 660-9706.

WANTED: Virgin .220 Russian cases. Call Lester Bruno (717) 455-2211.

United States Shooting Association Official Journal

US ^{2} A

122 Lafayette Avenue, Laurel, MD 20753 800-969-4867

United States Shooting Associatiuon (US^{2}A)

The **United States Shooting Association (US^{2}A)** is dedicated to the promotion and encouragement of the shooting sports in America, and throughout the world. It is a sad fact that increased urbanization and its related problems restrict large segments of the population from the opportunities to enjoy many aspects of the uniquely American heritage of sport shooting. Even in less densely populated regions, where space and attitudes permit more freedom for recreational shooting events, too frequently it is necessary to travel great distances to enjoy variety in competitive and educational sport shooting activities.

It is the major objective of **US^{2}A** to broaden access to the widest possible range of activities for sport shooting enthusiasts. This will include products and services, information, instructional opportunities, and competitive events of interest to active shooters in the widest possible range of shooting disciplines. US2A openly solicits the suggestions and participation of members in designing new and challenging competitive, instructional and informational programs.

To permit the widest possible participation in geographically dispersed competitive events, **US^{2}A** provides a central coordinating service called "FAXmatch." Through the medium of telecommunications facsimiles, a wider selection of competitive events and schedules can be made accessible to sport shooting enthusiasts throughout the world. Without the recurring expense of travel and accommodations to reach far flung range events, active shooters can compete in a wider choice of matches against a worldwide field of competitors.

"So..What's In It For You?"

Plain and simple, **US^{2}A** is for shooting and shooters. **US^{2}A** members get the most from their shooting dollar and develop competitive ability in all shooting skills by being able to take part in world class matches without a world class cost. In addition to the quick feedback of "FAXmatch" - in both conventional and member-designed challenge formats, US2A members also enjoy publications, news-letters and special information.

"FAXmatch" - **US^{2}A** will sponsor its own matches at affordable rates in many disciplines and formats - as well as coordinate the challenge matches of member organizations - and exchange results to participants worldwide by FAX.

Instruction and Coaching - Olympic quality training courses are available through **US^{2}A**. Instruction or coaching at any level in all shooting disciplines can be tailored to your individual or club needs. Renown experts are available for assignment at sites and schedules of your own choosing.

US^{2}A supports completely other Shooting Associations participating in competitive shooting of all types. Our objective is to support competitive shooting and provide programs in concert with other organizations over and above the present programs. It is intended to include all around chanpionships in Rifle, Pistol, Bench Rest, Silhouette and Shotgun including World Championships by Fax and Shoulder to Shoulder.

Annual Convention

Plans are now being formulated for our first annual convention to be held in Maryland in the October-November time frame. We anticipate having programs to encompass all of the Shooting Sports. These will include the following.

* **Planning Sessions**

1.Competitive Rifle
2.Competitive Pistol
3.Competitive Silhouette
4.Competitive High Power
5.Competitive Trap
6.Competitive Skeet
7.Competitive Sporting Clays

8.Competitive Law Enforcement
9.Professional Shooting in
all programs
10.Bench Rest

* **Educational Programs**
* **Manufacturer Exhibits**
* **Dealer Exhibits**
* **Self Protection Course**
* **Smallbore Clinic**
* **High Power Clinic**
* **International Rifle Clinic**
* **International Pistol Clinic**
* **International Shotgun Clinic**
* **Bench Rest Clinic**
* **Law Enforcement Clinic**
* **Rifle Coaches Clinic**
* **Pistol Coaches Clinic**
* **ACEP Coaches Course for Instructors**
* **Smallbore International Match**
* **Pistol International Match**
* **Gallery Rifle Match**
* **2700 Pistol Match**

International Fax Match

We are planning a program of International Matches by Fax as a Monthly League. These matches would be open to any participant in the world. The competitor would have to shoot in a regular match held in his country under International Rules. Results faxed to us with scores certified by the shooting organization and results would be FAXED BACK to the shooting organization in each country and overall internationally. We would hope to have a monthly league by FAX and actual international matches fired all on the same day and shoulder to shoulder matches.

National League in All Shooting Disciplines. We will hold Fax Matches as a monthly league open to any competitive shooter firing in sanctioned NRA, ATA, NSSA, UIT, Silhouette Assoc, Bench Rest, etc.. The mechanics of this would be simple. The competitor would have his score certified by the match sponsoring the competition. The competitor would fax in his certified score and the results would be faxed on a monthly basis. For example: There are many pistol tournaments and smallbore tournaments each month. A competitor could shoot in any tournament and have his scores faxed in to US^{2}A. Throughout the USA, it is anticipated we can build a very interesting league nationwide based on this competition. This we hope would provide the local club shooter a way of shooting in Natonal and International competitions and at a reasonable cost.

World Championship

We are planning to host an all round competition to crown an overall World Champion in shooting to include Rifle, Pistol, High Power Shotgun, Silhoutte and Bench Rest.

The United States Shooting Association is open to all groups in the shooting sports. The annual membership fees will be as follows.

Individual Member	**$60.00**
Affiliated Club	**$100.00**
Match Sponsor	**$250.00**
Shooting Sports Dealer	**$100.00**
Supporting Manufacturer or Supplier	**$250.00**

Individual members will be able to participate in all programs at a reduced fee. In addition each member will receive an annual subscription to Precision Shooting which will act as our official journal.

An Affiliated Club will receive a subscription to Precision Shooting and receive periodic reports.

Match Sponsor will be an affiliated sponsor to hold sanctioned shoulder to shoulder matches using US2A Programs specifically designed for US2A competition only.

Shooting Sports Dealer will receive Precision Shooting and be affiliated with US2A.

Supporting (Manufacturer or Supplier) will receive an annual subscription to Precision Shooting and participate in competitive pgorams sponsored by US2A.

U.S. Shooting Association Membership Application

122 Lafayette Avenue, Laurel, MD 20753 800-969-4867

Type of Membership ____ Individual $60.00 ____ Affiliated Club $100.00
____ Match Sponsor $250.00 ____ Shooting Sports Dealer $100.00
____ Supporting (Manufacturer or Supplier $250.00

Please Print:
Name ____________________ Address ____________________
City ____________________ State ________ Zip ____________________
Telephone Work ____________________ Home ____________________
Date of Birth ______________ if Club (Date founded)
NRA Member ____ Yes ____ No NRA Life Member ____ Yes ____ No

In order to better serve you please indicate your interest

- ___ NRA Pistol
- ___ NRA Smallbore Rifle
- ___ Rifle Silhouette
- ___ International Trap
- ___ Black Powder
- ___ Combat Pistol
- ___ ISU Smallbore Rifle
- ___ Moving Target
- ___ International Skeet
- ___ Air Gun
- ___ International Pistol
- ___ High Power
- ___ Trap
- ___ International Sporting Clays
- ___ Bench rest
- ___ Silhouette
- ___ Sporting Clays
- ___ Skeet
- ___ Bench Rest 22

Are you affiliated with any club? ____________
Name of Club ____________________
Person to contact at your club so we can call them with information on **US²A** Phone ____________________

Method of Payment (Do not send cash)
Make check or money order payable to: U.S. Shooting Association
Credit Card Amount ____________________
____ MasterCard No. ____________________ Expiration ________
____ Visa Card No. ____________________ Expiration ________

Signature ____________________
Date ____________________

INTERNATIONAL
RIMFIRE

50/50 NEWS

PO Box 27, Ranson, WV 25438
Milt Cook, Match Director
PS Update

MATCH SCHEDULE 1993

If anyone lives or is traveling near these locations and would like to give International Rimfire 50/50 a try, the following clubs have scheduled matches for 1993. You can call the Rangemaster for directions and times matches will begin. Individuals are not required to be members of an organization in order to compete. Entry fees are set by the sanctioned clubs. Results of matches at sanctioned clubs will be published in *International Rimfire 50/50 News*. World Records are being kept separately by International Rimfire 50/50 for outdoor, indoor, 50 yards and 50 meters competition. International Rimfire 50/50, for state championships, regional and national matches **only**, will recognize a three gun aggregate (13 1/2 lb., 10 1/2 lb. and Sporter classes) World Record and a two gun aggregate (13 1/2 lb. and 10 1/2 lb. classes) World Record.

Jefferson County Izaak Walton League
Leetown, West Virginia
Rangemaster: Gene Thompson #304-263-2400
May 16
June 20 - WV 50 Yard State Championship
July 18
Aug. 22 -WV 50 Meter State Championship

Englewood Gun Club
Englewood, Florida
Rangemaster: Stan Foster #813-474-0379
May 2 September 5 December 5
June 6 October 3
August 1 November 7

Gulf Coast Gun Club
Corpus Christi, Texas
Rangemaster: Hank VandenBout #512-852-6500
May 1 June 5 July 3 August 7

Indiana County Bow & Gun Club
Shelocta, Pennsylvania
Rangemaster: Donald C. Steffey #412-354-3269
June 20 July 25 August 29

Piedmont Handgunners Assn.
Winston-Salem, North Carolina
Rangemaster: Kent Rodgers #919-922-4711
May 8 August 14 October 9
June 12 September 11

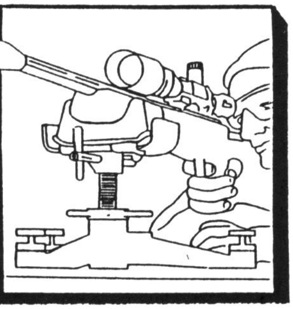
Coryell County Rifle & Pistol Club
Gatesville, Texas
Rangemaster: Fred Gould #817-865-6436
May 22

Orrington Rod & Gun Club
Orrington, Maine
Rangemaster: Frederic Martin #207-989-6241(after 9 pm)
May 30 August 1 September 5

UP AND DOWN THE LINE

I primarily expected people to take their .22's "out of the closet" to compete, but evidently I have also provided them with a good excuse to buy a gun. At our trial matches, it was unbelievable what was being dragged in. All of the gun stores and the gun shows were being ransacked by people looking for a good shooting .22. By reading some old articles and results of other rimfire competition, it does seem that some very old guns are still hard to beat. Suggestions I can make at this time for the 13 1/2 lb. class are: Remington 40X, Remington 37, Winchester 52, and Anshutz 54. The price seems to run from $300 to $500 in this area. There are a lot of other old heavy barrel guns out there just waiting to prove they are worthy of some nice words. With today's ammo these guns could be hell on wheels. The 10 1/2 lb. and Sporter classes are still wide open and only time will tell what guns will come to the front.......welcome to Eastern Township of Quebec, Canada, South Prairie Shooters of Minot, North Dakota, International Rimfire of West Texas (indoor) of Odessa, Texas, and South Georgia Benchrest Shooters of Georgetown, Georgia.......*MC*

BR-50 *International* ©



LARRY BROWN / Competition Coordinator
405 West Washington #260
San Diego, CA. 92103
619 / 299-4455

CENTERFIRE......100 YARDS
RIMFIRE..............50 YARDS
AIRGUN...............25 YARDS

((((SPOTLIGHT ON))))

NORTHWEST FLORIDA - Pensacola, FL. 2/28/93

Director: Del Heideman 904 / 477-3414

	(RIMFIRE)	Aggregate	Action	Scope	Ammo	Points/	Update
			#1of 2-Stack				
1	Chris Dolan	3521.5906	Win 52	25 Lym	Fiocchi	10/	10
2	Del Heideman	3418.9125	Ans (?)	27 Une	Eley	9/	9
3	Dave Smith	3217.2750	Win 52	24 B&L	Fiocchi	8/	8
4	Warren McFarland	3183.9844	Rem 40X	36 Leu	Eley	7/	7
5	Travis Ruhlow	3023.8312	Rem 37	24 B&L	Eley	6/	6
6	Les Smith	2851.2375	Rem 40X	24 B&L	Fiocchi	5/	5
7	Dave Johnson	2692.3500	Ans (?)	12 Une	Winchester	4/	4
8	Ed Hisey	2047.6062	Rem 37	24 Tas	Fiocchi	3/	3
9	Jim Saunders	1856.1594	Win 52	12 Une	Eley	2/	2
10	Alan McCullough	1467.3750	Hop&Allen	14 Une	CCI	1/	1
			#2 Of 2-Stack				
1	Dave Smith	3675.4312	Win 52	24 B&L	Fiocchi	10/	18
2	Les Smith	3323.0250	Rem 40X	24 B&L	Fiocchi	9/	14
3	Chris Dolan	3276.1312	Win 52	25 Lym	Fiocchi	8/	18
4	Warren McFarland	3178.9062	Rem 40X	36 Leu	Eley	7/	14
5	Del Heideman	3142.2375	Ans (?)	27 Une	Eley	6/	15
6	Travis Ruhlow	3135.8250	Rem 37	24 B&L	Eley	5/	11
7	Michell Smith	2648.9250	Ans 54	12 Une	Eley	4/	4
8	Ed Hisey	2532.7000	Rem 37	24 Tas	Fiocchi	3/	6
9	Jim Saunders	2271.3188	Win 52	12 Une	Eley	2/	4
10	Alan McCullough	2127.6937	Hop&Allen	14 Une	CCI	1/	2

CHRIS DOLAN flew in from California, Mac & Travis drove down from Indiana, Dave & Les came up from Bradenton. Welcome! We locals learned alot! --Del

BR-50 INTERNATIONAL

"The *real* BR-50"

1993 NATIONALS TOURNAMENT

Hosted by

TOMBALL GUN CLUB

Located in Tomball, Texas (25 miles NW of Houston)

October 9-10, 1993

Limited to the first 105 entries

Advance registration before 9/1/93 - $40.00
Registration after 9/1/93 - $60.00

Contact: Travis Jaroszewski
16720 Stuebner-Airline #201
Spring, Texas 77379
(713) 370-0659

MARCH 10, 1993

U.S.A.
TOP FORTY

	(AIRGUN)	G-LINE
1	Charline Pray	172.32
2	Howard Pray	164.20
3	Frank Perri	146.87
4	Dave Markee	132.80
5	Lee Markee	132.54

	(RIMFIRE)	
1	Chris Dolan	166.63
2	Steve Bradford	162.43
3	Brenda Greiner	158.92
4	Robert Dement	158.82
5	Selby Wright	151.99
6	Larry Delong	149.56
7	Warren McFarland	147.87
8	Dave Smith	146.26
9	Bill Calfee	143.37
10	Mike Niblett	142.35
11	Steve Turner	139.58
12	Travis Ruhlow	138.52
13	John Robbins	138.32
14	Hank VandenBout	136.60
15	Les Smith	136.18
16	Bruce Buckner	134.78
17	Macky Locklin	133.33
18	Phil Dadisman	130.43
19	Patricia Smith	130.31
20	Stan Hill	129.35
21	Steve Wieck	129.22
22	Del Heideman	128.71
23	Lew Massie	128.66
24	Garry Greiner	127.34
25	Jim Mack	124.95
26	Jim Bell	122.69
27	Frank Martin	119.59
28	Dick Tripp	119.31
29	Jim Taylor	114.30
30	Ed Hisey	110.36
31	Bob Polansky	107.71
32	Wade Helton	104.53
33	Ed Muff	103.92
34	Wayne Young	103.69
35	Wayne Wadlington	101.46

R. G. Robinett, Co-Director
P. O. Box 72
Madrid, IA 50156
(515) 795-2906

Terry Meyer, Co-Director
R. R. 1, Box 50
Thornton, IA 50479
(515) 998-2860

TCL
Ameri-Con-News

American Conference, Transcontinental Hunter Rifle League

1993 SCHEDULE

MAY			JUNE			JULY			AUGUST		
Mainville	vs.	Van Dyne	Mainville	vs.	Redwood	Mainville	vs.	No. Colo.	Mainville	vs.	LaGrande
No. Colo.	vs.	Redwood	No. Colo.	vs.	Van Dyne	LaGrande	vs.	Cody	No.Colo.	vs.	Cody
LaGrande	vs.	CenTex N.	LaGrande	vs.	Golden	No. Iowa	vs.	Holmen	No. Iowa	vs.	Buffalo
Cody	vs.	Golden	Cody	vs.	CenTex N.	Buffalo	vs.	Blue Grass	Van Dyne	s.	CenTex N.
No. Iowa	vs.	Richmond	No. Iowa	vs.	Dakota	Van Dyne	vs.	Redwood	Richmond	vs.	Other Texans
Holmen	vs.	Dakota	Holmen	vs.	Richmond	CenTex No.	vs.	Golden	Holmen	vs.	Blue Grass
Buffalo	vs.	OtherTexans	Buffalo	vs.	Aurora	Richmond	vs.	Dakota	Redwood	vs.	Golden
Blue Grass	vs	Aurora	Blue Grass	vs.	Other Texans	Other Texans	vs.	Aurora	Dakota	vs.	Aurora

The observant will notice some changes in the 1993 American Conference lineup. Notably, the demise of long-time American Conference contender Red Lodge, Montana; a saddening departure. A more cheerful picture from Boonsbourough! Yes, the Bluegrass, Kentucky club, having built a new range, surely mimics the phoenix. We excitedly welcome Bluegrass, piloted by Steve Sanson, back into Postal Hunter Rifle competition!

We have also decided to "pick up" Aurora, Illinois – this club was dropped from the National Conference after being unable to post all four "match" scores for 1992. Aurora, coordinated by John Sabonis, has historically been a 1220-1230 club for Bob Pease, TCL Founder/National Conference Coordinator. The historic potential of Aurora to score points is the reason we decided to vary from our policy of not adding clubs dropped from the National Conference. Consistent performance will be expected from Aurora.

For those who have not been exposed to the American Conference (read: Robinett and Meyer) policy of pickup up "dropped" teams: We have declined to consider all teams with an historic bent for underachievement, ie; low scores – especially and specifically 1200 or under. Complimenting this policy, we have stated to all prospects that we expect them to make reasonable progress and achieve 1220-1230 capability over a 4-5 year learning period.

Now, many birds have been passing overhead for the last week (Mach 22-27, 1993) and the odd avian drops a bomb to earth – some of these beauties land on the car – we try to avoid spying the honking hordes . . . we don't like being goosed – in the eye. Well, one of these bombs lands in our ear – whoa! Our ears were offended – whoa! It seems that some of our "preaching" is paying off – sort of. We have extolled the virtues of the match barrel non stop – for many years! We (possibly) were not specific enough on one detail! We may have made the proverbial ass out of U and ME – yep, we assumed that everyone understood that we were discussing HUNTER rifles . . .

. . . And we were/are! So, B-4-U spend your $$ on a HUNTER rifle, inform your gunsmith what you want – a competition Hunter Class Rifle – and be certain that he does not install a varmint taper barrel. This is all the more reason to use a bench rest gunsmith who is playing the game!

The hunter taper and varmint tapers are different – obtain a current copy of the rules from: Gary Long, Box 20, Lake Road, Mainville, PA 17846 (I.B.S. Secretary); Pat Baggett, Bus. Mgr., N.B.R.S.A., 2027 Buffalo, Levelland, TX 79336! Your rifle may be protested at a registered match – if it does not conform to the rules, we all lose. Please, know and follow the rules.

The Terrible One and I (no more of that we stuff) argued over the schedule for various reasons, until the ultimate terror (no, not Terry's Best Half, Pam) – wearied of our guibbling – Jason, heir apparent to the title of Terrible, roared, "Act like grown-ups!" Then, having gained our attention, the young Mr. Meyer demonstrated the application of logic to problem solving. The result is Terry's rendering of said application – remember, he's only left-handed, while Jason is ambidextrous – The 1993 American Conference schedule unfolded before our weary eyes.

I made two mistakes, both unforgivable, in the season wrap-up report: actually, the errors were oversights, and I owe my apology to both Dakota Bench rest and Cen. Tex. North. Both clubs donated to the Belt Buckle Fund early on – I deposited the checks but I did not record either on "the list". Lynn and Ken, I appreciate your tact and honorable dispositions toward my awkward handling of this matter of honor. Thank you. I am truly sorry.

Brothers of the Pack, stealthy coyotes have taken to spying on me all this winter. Not so timidly, they have come into my very yard, harassing Poco (the Airedale) and Maggie (English Pointer) to the point of barking. When I get up, the wraiths slink translucent – not quite invisible – into the edge, where they commence their not so hideous howling – only coyotes. In winters past, I would have "dispersed the party" with "the old .270". Things are changed, the wraiths only fulfill the bidding of their master – to torment and worry the timid – to disrupt peaceful dreams – yet this long winter, a calm settled over me . . . that realization . . . coyotes are only agents of dread – the Pack, that distant visage of evil is destined to feed upon the feeble – yet spring summons strength. Change is in the air, understanding quells fear – let the battle be joined!

For Hunter Rifle Competition
R. G. Robinett

TcL

TRANSCONTINENTAL HUNTER League - National Conference

BOB PEASE, League Director TONY HIDALGO, League Coordinator

We welcome three new clubs to the National Conference of the TRANSCONTINENTAL HUNTER RIFLE LEAGUE for 1993. Central Florida, Eastern Canada and Northern Colorado will make the coming season a challenging one.

ALIGNMENT AND 1993 SCHEDULE

EASTERN DIVISION	NORTHERN DIVISION	CENTRAL DIVISION	SOUTHWEST DIVISION
CAP.CITY ME	ENTIAT, WA	ST. LOUIS BR	AUSTIN TX
CHIPPEWA OH	W. MONTANA	LA CAJUNS	LAS VEGAS NV
DUNHAMS BAY	LA CROSSE WI	MENOM. FALLS WI	WACO AREA TX
HOLMSBURG PA	T.C. OREGON	MENTOR OH	SAN JUAN NM
TIFFIN OH IWL	SNOW SHOE AK	S.W. LOUISIANA	CTBRS TEXAS
CENTRAL FL	EAST CANADA	NO.COLORADO	SOUTH FLORIDA

* * *

MAY

Cap.City,ME	vs.	St. Louis BR	Entiat,WA	vs.	LA Cajuns
Chippewa,OH	vs.	Menominee Falls	W. Montana	vs.	San Juan,NM
Dunhams Bay	vs.	Austin,TX	T.C. Oregon	vs.	No.Colorado
Holmsburg,PA	vs.	Canada	Snowshoe,AK	vs.	LasVegas,NV
Tiffin,OH	vs.	Waco Area,TX	Mentor,OH	vs.	South FL
Central FL	vs.	LaCrosse,WI	S.W.Louisiana	vs.	CTBRS Texas

* * *

JUNE

Austin,TX	vs.	T.C. Oregon	St.Louis BR	vs.	Dunhams Bay
LasVegas,NV	vs.	S.W. Louisiana	Mentor,OH	vs.	Tiffin,OH
Waco Area,TX	vs.	Menominee Falls	No.Colorado	vs.	Snowshoe,AK
SanJuan,NM	vs.	LA Cajuns	Entiat,WA	vs.	Cap.City,ME
CTBRS Texas	vs.	W. Montana	LaCrosse,WI	vs.	Chippewa,OH
South FL	vs.	Holmsburg,PA	Canada	vs.	Central FL

* * *

JULY

St.Louis BR	vs.	Entiat,WA	CTBRS Texas	vs.	Cap.City,ME
LA Cajuns	vs.	Austin,TX	South FL	vs.	Central FL
MenomineeFalls	vs.	LasVegas,NV	Canada	vs.	Chippewa,OH
Mentor,OH	vs.	Waco Area,TX	SnowShoe,AK	vs.	Tiffin,OH
S.W.Louisiana	vs.	SanJuan,NM	T.C. Oregon	vs.	Dunhams Bay
No.Colorado	vs.	W. Montana	LaCrosse,WI	vs.	Holmsburg,PA

* * *

AUGUST

Entiat,WA	vs.	SnowShoe,AK	Dunhams Bay	vs.	SanJuan,NM
W. Montana	vs.	S.W. Louisiana	Holmsburg,PA	vs.	Mentor,OH
LaCrosse,WI	vs.	Waco Area,TX	Tiffin,OH	vs.	No. Colorado
T.C. Oregon	vs.	CTBRS Texas	Central FL	vs.	Menominee Falls
Canada	vs.	South FL	Chippewa,OH	vs.	LasVegas,NV
Cap.City,ME	vs.	Austin,TX	St.Louis BR	vs.	LA Cajuns

SCHEDULE COORDINATOR Bill Cote

IBS News

Edited by Dave Brennan

IBS RIFLEMAN/WOMAN STANDINGS AS OF DECEMBER 1992

THE LAST TIME THAT THE IBS PUBLISHED A COMPLETE LIST OF THE POINTS EARNED IN IBS MATCHES WAS IN FEBRUARY 1986. RECENTLY, (FOR THE PAST YEAR AND A HALF), I HAVE BEEN SCORING AND ENTERING INTO THE COMPUTER THE MATCHES FOR 1986 THROUGH THE PRESENT. THE ATTACHED LIST IS WHAT I BELIEVE TO BE AS ACCURATE AS POSSIBLE A LISTING OF CURRENT PRECISION RIFLEMAN POINTS. THESE FIGURES ARE BASED ON THE MATCH REPORTS THAT HAVE BEEN SUBMITTED TO THE IBS.

EXHIBIT (A) CONTAINS THE RULES USED TO SCORE ALL IBS MATCHES. EXHIBIT (B) CONTAINS A LIST OF ALL SHOOTERS IN ALPHABETICAL ORDER WHO HAVE SCORED POINTS IN IBS COMPETITION. EXHIBIT (C) CONTAINS A LISTING OF THE FORTY TWO INDIVIDUALS WHO HAVE EARNED THE PRECISON RIFLEMAN AWARD.

THERE ARE REASONS WHY THE IBS TALLY MAY DIFFER FROM THE SHOOTERS. AMONG THESE ARE REPORTS NEVER SENT TO THE IBS, AS WELL AS A DIFFERENCE IN SCORING BECAUSE OF THE NUMBER OF SHOOTERS IN A MATCH.

IF ANYONE FEELS THAT THE TOTAL IS INCORRECT THEN IT IS UP TO THE SHOOTER TO PROVE HIS TOTAL. YOU MUST WRITE THE UNDERSIGNED A LETTER GIVING THE DATES OF THE MATCHES, THE LOCATION AND THE POINTS SCORED. IF YOU HAVE COPIES OF THE MATCH REPORTS TO SUPPORT YOUR NUMBERS THIS WILL BE ESPECIALLY HELPFUL IF IT IS FOR A MATCH REPORT THAT IS MISSING FROM OUR RECORDS. AND PLEASE NO TELEPHONE CALLS. I AM SURE ANY DIFFERENCES CAN BE RESOLVED BUT WE NEED A WRITTEN REQUEST.

PAUL C. RYAN
1005 PHEASANT RUN
CLARKS SUMMIT, PA 18411

EXHIBIT A

THE PRECISION RIFLEMAN AWARD

Bronze	30 points
Silver	60 points
Gold	100 points

Points will be tallied retroactive to the beginning of IBS competition.

Points can be earned in the following manner:

IBS Championship Matches (over 50 competitors)

Three Gun	5 points
Grand Aggregate	4 points
Range Aggregate	2 points
Top 10 - 3 gun	1 point
Top 10 - 3 Gun 1 point	
Top 10 (Grand)	1 point

IBS Records set

Group	2 points
Agg.	4 points

IBS Championship matches (20 to 49 competitors)

Three Gun	2 points
Grand Aggregate	2 points
Range Aggregate	1 point
Top 10 (Grand)	½ point

Any IBS Registered Match (over 50 competitors)

Two gun	2 points
Grand Aggregate	2 points
Range Aggregate	1 point
Top 3 Grand Aggregate	½ point

Any IBS registered Match (20 to 49 competitors)

Two Gun	1 point
Grand Aggregate	1 point
Range Aggregate	½ point

EXHIBIT B

LAST NAME	FIRST NAME	POINTS
ABBOT	DAVE	1.0
ADAMOWICZ	MEG	2.0
ADAMOWICZ	ROBERT	34.0
ADAMS	AUDY	1.0
ALBERTS	J.	3.5
ALTEMUS	RICHARD	2.5
AMATRUDO	GARY	1.0
ANDERSON	GARY	6.0
ANGERMAN	AL	2.0
ANTONELLI	BOB	.5
ARNOLD	CHARLES	.5
ATKINSON	BRENDON	6.0
AVERY	ROGER	4.0
BAILEY	BILL	8.5
BAILEY	K	1.0
BAKER	RICHARD	33.0
BALCH	WALTER	.5
BALLAS	DENNIS	2.0
BANIK	JOE	1.0
BARAVELLE	CRAIG	.5
BARBER	NORM	1.5
BARRON	MEL	.5
BASSET	MARLIN	8.0
BASTINI	OSCAR	1.0
BATTISTO	ART	4.0
BAUER	WILLIE	1.0
BEAVER	PAUL	.5
BELDEN	JOHN	2.0
BENCH	ALLEN	4.0
BENEDICT	CLINT	4.5
BERGER	WALT	11.0
BERKHART	RODGER	7.5
BLACK	OGDEN	1.0
BLAZZARD	D	1.0
BLENSINGER	ART	40.0
BOISE	TOM	3.0
BOLLINGER	PAUL	3.5
BONTER	F	2.5
BOOP	DALE	24.5
BOOP	NATHAN	113.5
BOOP	RUSS	60.5
BORDEN	JAMES	54.0
BORDEN	JOHN	3.5
BORSCH	STEPHEN	3.0
BOYER	FAYE	34.0
BOYER	TONY	285.0
BRACONI	JEAN C.	7.0
BRAWAND	BILL	33.5
BRENNAN	DAVE	3.0
BRENNAN	LIZ	.5
BROTHERS	RONALD	1.0
BROUSSARD	FRANCIS	1.0
BROWN	R	4.0
BROWN JR	JOHN	29.5
BROWNELL	RICHARD	2.5
BROYLES	BOB	1.5
BRUNET	RAYMOND	2.0
BRUNO	LESTER	136.0
BRUSH	TOM	1.5
BUCHTEL	STAN	1.0
BUHRMAN	HENRY	25.0
BURGES	EUBERT	6.5
BURNS	PAUL	2.0
BURTON	J	.5
BUSSARD	MIKE	1.0
CAHALL	WOODY	6.0
CANTWELL	TIM	5.0
CARATSOLE	MARTY	2.5
CARRERA	MIKE	.5
CARUSO	DAN	7.5
CASANOVA	LUIGI	1.5
CAUVIN	BART	2.0
CHIMBOS	R	.5
CHRISMAN	JOHN	17.0
CHRISMAN	PATRICK	1.0
CHURCH	LOU	10.5
CINTRON	CARL	.5
CLEAVENGE	BRUCE	8.5
COCCHIA	ART	.5
COLE	R	1.0
COLLINS	DENNIS	37.0
CONWAY	GARY	5.0
COOK	MILT	11.5
CORK	BERNARD	1.0
CORNELISON	L	3.0
COWLES	JEFF	4.5
COX	JACK	.5
CREASY	PAUL	1.0
CREIGHTON	AL	1.5
CROSTAU	JEAN J.	1.5
CULVER	EDITH	1.0
CULVER	HOMER	12.5
CUPO	AL	2.0
CUPO	R	1.0
CZARKOWSKI	R	4.5
DARROW	DAVID	.5
DAUGHERTY	DUNCAN	5.0
DAVIDSON	ALVIN	3.0
DAVIDSON	JOHN	.5
DAVIS	JOE	2.5
DEAN	WENDAL	14.0
DECKER	E	3.5
DELOUIE	MAURICE	.5
DEMETER	CHARLES	.5
DEMING	JACK	153.5
DEMMER	JOHN	5.0
DEMONSTOY	BOB	8.5
DENNIS	RUSS	1.5
DENNOF	J.D.	2.0
DENTON	RICH	1.5
DETSH	CLARENCE	12.5
DETSH	TERRY	3.0
DEVLIEGHER	BARRY	35.0
DILL	RON	4.0
DIXON	NORM	19.5
DREXLER	R	.5
DRUCK	BEN	.5
DRUCK	TEDD	1.0
DRYFIELD	BILL	7.0
DUNBAR	HENRY	2.5
DUNN	BILL	8.0
DZUGAN	CHARLES	4.5
EARP SR	LARRY	4.0
EATON	JOHN	39.0
ECKRUTE	CONRAD	.5
EDWARDS	ALBERT	.5
EGGLESTON	DAVID	1.0
ELLINGER	R	1.0
ELLISON	WOODY	12.5
ELLITHORPE	ERWIN	1.0
ELTON	R	1.0
ELY	JEFF	12.0
ESTES	LARRY	5.0
ETTER	GEORGE	1.5
EUBER	ALLIE	244.5
EUBER	DAN	.5
EUBER	ERIC	10.0
EUBER	GORDY	21.0
EUBER	LEE	111.5
FARNSWORTH	IRA	2.0
FAVARON	MARIO	6.0
FEDOROWICH	JIM	1.0
FERGESON	ED	.5
FIELDING	W	1.0
FIELDS	GARY	7.5
FIELDS	SHAWN	.5
FIFER		2.0
FINLEY	FRED	.5
FORRESTER	BILL	9.0
FORYS	GERALD	1.0
FOUNTAINE	CHARLES	16.0
FOURNIER	JOHN	13.0
FOWLER	JEFF	18.0
FRASK	CORY	.5
FRASK	PETER	1.0
FREI	LOWELL	13.0
FREUND	ART	5.0
FRITZ	RANDY	4.5
FRITZ	TODD	1.0
FRY	JOHN	24.0
FURROW	DWIGHT	1.5
GAMBLE	MIKE	10.5
GAMMON	BILL	4.0
GARCELON	A.H.(DOC)	5.0
GARCIA	MANNY	2.5
GEBHARDT	BILL	35.0
GEIGER	DAVE	5.0
GELETY	FRANK	.5
GENTNER	DON	105.0
GERACI	DON	6.0
GIAMO	VINCE	1.5
GILBERT	JOE	9.0
GILBERT	KEN	7.5
GILBERT	KENNETH	1.0
GILKERSON	ORLIN	1.0
GINGHER	TOM	.5
GLOVER	ART	1.0
GOFF	ED	102.0
GOGAN	GEORGE	.5
GOLBA	JOE	4.5
GONELLA	AL	1.0
GONNELLA	CHRIS	.5
GONNELLA	HANK	1.0
GOODLING	SID	.5
GOODWIN	FRANK	.5
GORDON	SKIP	.5
GORDON JR	B	.5
GOSCIMINSKI	RON	1.5
GOUGH	CHARLES	3.0
GOWER	ROGER	47.0
GRAHAM	R	1.0
GREEN	GUY	14.5
GREENWALT	JIM	8.5
GREER	JIM	9.0
GRIFFIN	BOB	1.5
GRIFFIN	JIM	1.0
GRIFFIN	MIKE	2.5
GUILDS	JERRY	1.0
HAIN	DICK	.5
HALL	ALAN	7.5
HALL	DAVE	15.0
HALL	R	.5
HAMMERICH	PETER	7.0
HAMMONDS	CLARENCE	27.0
HAMMONDS	LINDA	1.0
HANDSCHUH	AL	1.5
HANSELMAN	LARRY	.5
HARSHMAN	KENT	1.0
HART	BOBBY	5.0
HART	CLYDE	8.0
HART	JIM	5.0
HART	P.J.	103.0
HART	ROBERT W.	17.5
HART	WALLY	21.5
HASECUSTER	FRED	18.5
HAWKINS	BOB	1.0
HAYLE	ARNOLD	.5
HENSLEY	MENSEL	8.5
HENSLEY	SMILEY	58.5
HERBERT	M	.5
HESS	GLENN	24.0
HEXUM	TOM	2.0
HIDALGO	TONY	3.0
HIGGINS	JOE	3.5
HILEMAN	RICK	1.0
HILL	HAROLD	1.0
HILLS	WALTER	1.5
HOARD	ED	9.0
HOBBS	GARRY	.5
HOEHN	RON	32.0
HOFFER	HARLAN	20.0
HOGAN	GEORGE	.5
HOLLIDAY	MARK	7.0
HOLLISTER	BRIAN	30.0
HOLLISTER	JOHN	24.5
HOLLISTER	MYLES	50.5
HOOPER	PAUL	2.5
HOPKINS	TONY	.5
HORENBURG	TOM	53.0

HORNBECK	RICK	3.5
HOSEY	NED	4.5
HOSTETTER	KEN	2.0
HOTTENSTEIN	LOWELL	7.5
HOWARD	WAYNE	.5
HUCKEBA	CHARLES	5.5
HUGHES	R	.5
HUNT	LYNN	1.0
HUTCHISON	J	1.0
JACKSON	GEORGE	.5
JACKSON	T.J.	3.0
JAIMAN	AL	1.0
JAMES	FRANK	2.0
JEZIORO	FRANK	.5
JOHNSON	BLAIN	2.5
JOHNSON	FRED	1.0
JOHNSON	PAUL	2.0
JOHNSON	RON	8.0
JOINER	EDGAR	11.5
JOLY	AL	1.0
JONES	DON	2.0
JONES	J. ROBERT	1.0
JONES	JOHN	6.0
JONES	PHIL	4.0
JUDD	RALPH	2.0
KEENE	DAVE	1.5
KELBLY SR	GEORGE	6.0
KELLY	TOM	2.5
KEMPFER	PAUL	20.5
KENT	J	.5
KING	ALAN	11.5
KLEYNOSKI	LEN	2.0
KNOBLOCK	ED	2.5
KNOX	DON	3.0
KOGOY	ALAN	.5
KOGOY	ALAN M.	1.0
KOGOY	ALAN R	.5
KOGOY SR	ALAN	1.0
KORNTUIAK	ALEX	.5
KRANCH	DAVE	10.5
KRUG	G	4.0
LAKE	TOM	12.5
LAND	GERRALD	3.0
LAZOT	TOM	1.0
LE BARRON	TIM	6.0
LEMBO	BOB	.5
LENT	BILL	12.0
LEVY	HOWIE	23.5
LINDSAY	HOWARD	1.0
LINN	BOB	.5
LIVENWOOD	KENNETH	1.0
LOCKHART SR.	JOE	1.0
LOCKWOOD	DICK	1.0
LOCKWOOD	RICHARD	1.0
LOEBSAK	CHUCK	1.5
LONG	GARRY	16.0
LYNN	ALEX	.5
LYNN	CARL	23.5
LYNN	JEANNE	21.5
LYON	JAMES	1.0
MACKERT	JOHN	.5
MADEIRA	CRAIG	1.0
MADEIRA	DALE	.5
MAGNATE	CHARLES	1.0
MAHER	JAMES	5.0
MARETZO	RICHARD	121.5
MARGELEWICZ	TONY	24.5
MASKER	GERALD	48.5
MASKER	SEELY	91.5
MASON	JOHN	.5
MASSIE	HOBERT	1.0
MASTRIANNI	MIKE	1.0
MATYAS	JOHN	12.0
MCCOY 111	GEORGE	3.5
MCELWEE	E.P.	3.0
MCFARLAND	EARL	4.0
MCGUIGAN	BOB	7.5
MCKEE	FRANK	5.5
MCLLWAIN	DON	6.5
MCMILLAN	PAT	13.0
MCPHERSON	GARY	4.0
MEREDETH	THOMAS	2.0
MESSNER	TOM	1.0
METZGER	TOM	5.0
MEYER	JIM	6.0
MILLER	K.L.	5.0
MILLER	MELVIN	.5
MILLER	WAYNE	6.0
MILLS	BERNARD	1.0
MINNEMAN	BILL	4.0
MITCH	RAY	2.5
MITCHELL	PAUL	4.5
MOORHEAD	RITCHIE	23.0
MORTON	PERRY	38.0
MORTON	RICHARD	.5
MORTON	ROD	14.0
MOSSAKOWSKI	CHET	1.0
MOULTHROUP	JOHN	2.0
MURDICA	LOU	1.0
NAGY	GEZA	31.5
NAGY	JOE	1.5
NAJEM	RAYMOND W	1.0
NEUHARD	MARION	5.5
NEWICK	GLENN	60.0
NIELSON	DON	25.5
NIEMI	BILL	4.0
NIEMI	BRIAN	.5
NIGRO	GENE	.5
NOLDER	DON	2.0
NOVAK	JIM	3.0
NYFFLER	DAN	.5
OBERT	DAVID	1.0
OBRACHATA	FRANK	13.5
OCOCK	GARRY	177.0
OGDEN	MARLIN	.5
OLEWINE	PAUL	20.5
OLIVER	JAMES	62.5
OLIVER	JASON	.5
ORR	DEWAYNE	2.0
OSTRANDER	GARY	.5
OTIS	R	4.5
OTTO	SKIP	5.0
PAGE	WARREN	16.0
PALMISANO	LOU	4.5
PAPP	R.	2.0
PARKER	JOE	2.0
PARRECO	TED	19.5
PASTORELLA	VINCE	19.0
PAZRENZA	E.	4.0
PEARSALL	BOB	4.5
PEASE	BOB	1.5
PERIA	TOM	33.0
PERIERA	WALT	.5
PERRY	ROSS	.5
PERSON	RICHARD	.5
PHILLIPS	ED	1.0
PICKWICK	HAROLD	1.0
PINDELL	FERRIS	7.0
PLATUKIS	DAN	1.0
POTSKER	RON	1.5
POWELL	DONALD	4.0
PRICE	DONALEE	12.5
PRICE	GLEN	30.0
PRYOR	RICHARD	3.0
QUERICO	T.	1.0
RAIDE	R.	1.0
RASSIER	DAN	1.0
REA	DOUG	1.0
RECHNITZER	PETE	3.0
REGER	HAROLD	.5
REYNOLDS	J.	4.5
RICHARDS	LLOYD	11.5
RIEGEL	DAVE	1.0
ROLLINS	BRUCE	.5
ROSEN	RON	8.0
ROSENTHAL	BRAD	8.0
ROWLEY	BILL	9.5
RUBRIGHT	BRIAN	33.5
RYAN	PAUL	12.0
RYMPKEMA	BERT	9.0
SABO	AGNES	1.5
SAEMUNDSON	BIRGIR	2.0
SAHLER	WILLI	4.5
SARGOOD	DONALD	5.0
SAUER	PHIL	20.0
SCHARNHORST	LARRY	1.0
SCHEFFLER	KEN	2.5
SCHIELE	DON	.5
SCHUCKERS	GEORGE	15.5
SERATN	ROGER	1.5
SHEATS	LARRY	.5
SHILEN	ED	1.0
SHINKLE	ERWIN	5.0
SICIANA	BOB	2.0
SICINA	MIKE	2.5
SILVER	RAY	11.0
SINBARI	TIMOTHY	1.0
SINCLAIR	FRED	11.0
SKIVER	AL	2.5
SMEIGH	JON	7.0
SMITH	DAVE	2.0
SMITH	GLENN	.5

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SMITH	JAMES K.	.5
SMITH	PETE	1.5
SNYE	TOM	.5
SORI	STEVE	4.0
SOUTHARD	GERALD	9.5
SPENCER	CLAY	1.5
STAHL	JOHN	7.0
STANNARD	GEORGE	3.0
STARK	HERB	1.0
STARSINSKI	ED	21.0
STARZINSKI	STAN	1.5
STATON	SAM	2.0
STEKL	JAMES	44.5
STEKL	JOHN	3.0
STICLLER	GEORGE	4.0
STOCUM	J.	3.0
STOHNER	FLOYD	4.5
STOVER	JEFF	2.5
STRICKLAND	HAROLD	1.0
SUMMERS	JEFF	5.0
SUNDELL	DAVE	.5
SUTTON	BILL	1.5
SUTTON	JACK	16.5
SVACK	TOM	13.5
SWINDLEHURST	VIC	2.0
TAKANO	TURK	6.0
TARDY	WILLIAM	3.5
THEIS	BILL	19.0
THOMAS	RAY	1.0
THOMPSON	E	2.0
THOMPSON	JEFF	4.0
THOMPSON	PAUL	9.0
TINSLEY	RANDAL	3.0
TIRELL	FRANK	.5
TOLUBA	P.	1.0
TOOLEY	EMORY	8.0
TOTH	MIKE	4.0
TRELA	JOHN	4.5
TROMMER	BILL	2.0
ULRICH	GEORGE	.5
VAHLE	FRAN	1.5
VALAN	KENNETH	.5
VENTRIGILA	JOHN	3.0
VINCI	JOE	31.0
VOGEL	DAVID	3.5
VORHEES	JERRY	1.0
WACHMAN	G.	.5
WAGNER	CHARLES	.5
WAGNER	DENNIS	4.0
WAHL	BUTCH	5.0
WALKER	MIKE	29.0
WALKER	OLIVE	2.5
WALLACE	DOUG	1.0
WALTERS	L.K.	1.0
WATSON	ED	41.5
WATSON	R.	1.0
WEAVER	ROSS	1.0
WEAVER	SAM	2.5
WELSH	BUD	1.0
WHITE	BOB	112.0
WHITEASH	RICH	8.0
WHITNER	BILL	1.0
WHITNEY	IRA	12.0
WIEDER	BART	76.5
WILLARD	CALVIN	.5
WILLIAMS	BERNIE	2.0
WILLIAMS	MIKE	13.5
WILSON	RAY	.5
WINTERS	JOE	6.0
WIPER	PIERRE	.5
WOMACK	C.B.	4.0
WOOF	GLEN	2.0
WOOLENS	BOB	1.5
WOTHE	PAUL	12.5
WRIGHT	SELBY	11.0
YANOSEY	J.	2.0
YERKES	BOB	.5
YOUNG	K.	.5
YURCHAK	NICK	4.0
ZEIGLER	TIM	1.0
ZEYN	JAMES	1.5

EXHIBIT C

SHOOTER		QUALIFYING YEAR	POINTS	LEVEL
DEMING	JACK	1977	153.5	GOLD
HART	P.J.	1977	103.0	GOLD
HOLLISTER	MYLES	1977	50.5	BRONZE
STEKL	JAMES	1977	44.5	BRONZE
BLENSINGER	ART	1979	40.0	BRONZE
BRUNO	LESTER	1980	136.0	GOLD
EUBER	ALLIE	1980	244.5	GOLD
OCOCK	GARRY	1980	177.0	GOLD
BOOP	NATHAN	1982	113.5	GOLD
EATON	JOHN	1982	39.0	BRONZE
EUBER	LEE	1982	111.5	GOLD
GOFF	ED	1982	102.0	GOLD
MASKER	SEELY	1982	91.5	SILVER
PRICE	GLEN	1982	30.0	BRONZE
GOWER	ROGER	1983	47.0	BRONZE
NEWICK	GLENN	1983	60.0	SILVER
WHITE	BOB	1983	112.0	GOLD
BOYER	TONY	1984	285.0	GOLD
MARETZO	RICHARD	1984	121.5	GOLD
VINCI	JOE	1984	31.0	BRONZE
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OLIVER	JAMES	1986	62.5	SILVER
COLLINS	DENNIS	1987	37.0	BRONZE
HORENBURG	TOM	1987	53.0	BRONZE
GENTNER	DON	1988	105.0	GOLD
BOOP	RUSS	1989	60.5	SILVER
HENSLEY	SMILEY	1989	58.5	BRONZE
RUBRIGHT	BRIAN	1989	33.5	BRONZE
MORTON	PERRY	1990	38.0	BRONZE
ADAMOWICZ	ROBERT	1992	34.0	BRONZE
BOYER	FAYE	1992	34.0	BRONZE
BRAWAND	BILL	1992	33.5	BRONZE
DEVLIEGHER	BARRY	1992	35.0	BRONZE
GEBHARDT	BILL	1992	35.0	BRONZE
HOEHN	RON	1992	32.0	BRONZE
HOLLISTER	BRIAN	1992	30.0	BRONZE
NAGY	GEZA	1992	31.5	BRONZE
PERIA	TOM	1992	33.0	BRONZE
WATSON	ED	1992	41.5	BRONZE

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( ) 1 Year Membership and PS Airmail outside USA – $60 in US Funds.

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1993 TENTATIVE MATCH SCHEDULE

SCORE

May 2 — MAINVILLE, 200 yards, 10 a.m., H/VH/VFS

May 9 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

May 15 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

May 15-16 — WELD CNTY, 100 yards, 9 a.m., VFS/H

May 16 — MONROE CHESTER, 100 yards, 10 a.m., H/VH/VFS

May 16 — ORRINGTON, 100 yards, 9 a.m., H/VH/VFS

May 16 — SALISBURY, 200 yards, 11 a.m., H/VH/VFS

May 16 — YORK, 100 yards, 10:30 a.m., H/VH/VFS

May 23 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

May 23 — THURMONT, 100 yards, 11 a.m., H/VH/VFS

May 30 — SULPHYR SPRINGS, 100 yards, 10 a.m., H/VH/LV/HV (FC)

June 5-6 — DUNHAMS BAY, 100/200, 9 a.m., NY STATE CHAMPIONSHIPS H/VH/VFS

June 6 — BOWMANSTOWN, 100 yards, 10 a.m., H/VH/LV/HV

June 6 — SALISBURY, 100 yards, 11 a.m., H/VH/VFS

June 12 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

June 12-13 — WELD CNTY, 100 yards, 9 a.m., VFS/H - Colo. St. Champ.

June 13 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

June 19-20 — WELD CNTY, 100/200 yards, 9 a.m., SP/HB - Colo. St. Champ.

June 20 — MONROE CHESTER, 100 yards, 10 a.m., H/VH/VFS

June 20 — YORK, 100 yards, 10:30 a.m., H/VH/VFS

June 26 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

June 27 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

June 27 — SULPHYR SPRINGS, 100 yards, 10 a.m., H/VH/LV/HV (FC)

June 27 — THURMONT, 100 yards, 11 a.m., H/VH/VFS

July 4 — SALISBURY, 100 yards, 11 a.m., H/VH/VFS

July 10-11 — WELD CNTY, 100 yards, 9 a.m., VFS/H Mid-Cont. Regn'als

July 11 — MAINVILLE, 100 yards, 10 a.m., H/VH/VFS (FC)

July 11 — ORRINGTON, 100 yards, 9 a.m., H/VH/VFS

July 17-18 — YORK, 100 & 200 yards, 10:30 a.m., H/VH/VFS

July 18 — MONROE-CHESTER, 100 yards, 10 a.m., H/VH/VFS

July 24-25 — CAPITAL CITY, Me. St. Champ., 100 yards, 9 a.m., H/VH/VFS

July 24 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

July 25 — SULPHYR SPRINGS, 100 yards, 10 a.m., H/VH/LV/HV (FC)

July 25 — THURMONT, 300 yards, 11 a.m., H/VH/VFS

Aug. 1 — BOWMANSTOWN, 100 yards, 10 a.m., H/VH/LV/HV

Aug. 1 — SALISBURY, 100 yards, 11 a.m., H/VH/VFS

Aug. 7 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

Aug. 15 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

Aug. 15 — YORK, 200 yards, 10 a.m., H/VH/VFS

Aug. 21 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

Aug. 22 — MONROE-CHESTER, 100 yards, 10 a.m., H/VH/VFS

Aug. 22 — HARRISON, Mi. St. Champ., 100 yards, 9 a.m., H/VH/VFS

Aug. 28-29 — UNION COUNTY, 200/300 yard IBS LONG DISTANCE CHAMPIONSHIPS - 200 yards 9 a.m., 300 yards, 9 a.m., H/VH/VFS

Aug. 29 — THURMONT, 200 yards, 11 a.m., H/VH/VFS

Sept. 5 — BOWMANSTOWN, 100 yards, 10 a.m., H/VH/LV/HV

Sept. 5 — SALISBURY, 200 yards, 11 a.m., H/VH/VFS

Sept. 11 — HARRISON, 100 yards, 10 a.m., H/VH/VFS

Sept. 12 — MONROE-CHESTER, 100 yards, 10 a.m., H/VH/VFS

Sept. 11-12 — WELD CNTY, 100/200 yards, 9 a.m., HV/LV - Colo. Champs.

Sept. 12 — MONROE-CHESTER, 100 yards, 10 a.m., H/VH/VFS

Sept. 12 — ORRINGTON, 100 yards, 9 a.m., H/VH/VFS

Sept. 12 — SULPHYR SPRINGS, 100 yards, 10 a.m., H/VH/LV/HV (FC)

Sept. 12 — YORK, 100 yards, 10:30 a.m., H/VH/VFS

Sept. 18-19 — MAINVILLE, IBS SCORE CHAMPIONSHIPS (Nationals) - 100 yards 9 a.m., 200 yards 9 a.m. H/VH/VFS

Sept 26 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

Sept. 26 — THURMONT, 100 yards, 11 a.m., H/VH/VFS

Oct. 2-3 — SALISBURY, Maryland St. Championship - H/VH/VFS, 100 yards - 10 a.m., 200 yards - 9 a.m.

Oct. 10 — MONROE-CHESTER, 100 yards, 10 a.m., H/VH/VFS

Oct. 10 — ORRINGTON, 100 yards, 9 a.m., H/VH/VFS

Oct. 10 — SULPHYR SPRINGS, 100 yards, 10 a.m., H/VH/LV/HV (FC)

Oct. 17 — BOWMANSTOWN, 100 yards, 10 a.m., H/VH/LV/HV

Oct. 17 — CAPITAL CITY, 100 yards, 9 a.m., H/VH/VFS

Oct. 17 — YORK, 100 yards, 10:30 a.m., H/VH/VFS

Oct. 24 — THURMONT, 100 yards, 11 a.m., H/VH/VFS

Oct. 31 — MAINVILLE, 100 yards, 10 a.m., H/VH/VFS (FC)

Nov. 7 — MONROE-CHESTER, 100 yards, 10 a.m., H/VH/VFS

Nov. 7 — SALISBURY, 100 yards, 11 a.m., H/VH/VFS

Nov. 14 — MAINVILLE, 100 yards, 10 a.m., H/VH/VFS (FC)

GROUP

May 8-9 — UNION COUNTY, Memorial Shoot, 100/200 LV 9 a.m. Sat., 100/200 HV 8 a.m., Sun.

May 23 — UNION COUNTY, 100 yards 10 a.m., H/VH/VFS

June 12-13 — UNION COUNTY, IBS 200/300 Championship, 200/300 LV 9 a.m. Sat., 200/300 HV 8 a.m., Sun.

June 26-27 — SOUTH CREEK, 100/200 yards, 8 a.m., HV/LV

July 10-11 — DUNHAMS BAY, 100/200, 9 a.m. both days, LV/HV/HB

July 17-18 — CAMILLUS, IBS HB Nat'ls, 100 Sat., 200 Sun., 9 a.m., HB/HV. Clyde Hart Memorial Match

Aug. 4-7 — UNION COUNTY, IBS VARMINT NATIONALS, LV/SP 9 a.m., HV 8 ,am.

Sept. 26 — DUNHAMS BAY, 11 a.m., Memorial Shoot, HV - 100 meters, H 100 yards

Oct. 3 — UNION COUNTY, 100 yards, 10 a.m., H/VH/VFS

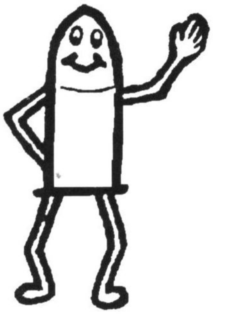
THE SCORE SHEET

By the time you are reading this column the Winter of '93 will be over and the majority of us will have shot at least one match. Hope you were able to get the cobwebs out. But in the meantime, in a little place called Kannapolis, NC, there is a range called **Tuckertown Benchrest Barn**. Believe it or not that is just what it is — a BARN! Range director Don Sutton has sent me the statistics on the barn. It is 400' long and 43' wide. It is lighted, has a 43' x 100' loading area with built in tables, and 11 concrete benches. This sounds like the answer to Winter League!! The Barn held its first match on Jan. 30th and 31st. Twenty-one competitors shot **Light Varmint for Score** on Saturday with **Ronnie McKnight** taking first place with a 250-15X's, using a 22PPC. Sunday again had twenty-one shooters in **Heavy Varmint for Score** with **Dave Tooley** taking top honors with a 250-17X's using a 30 American. Using a .257 Imp **Jeff Fowler** shot a respectable 250-16X's to take 2nd place on Sunday. Congratulatons gentlemen on some fine shooting.

Many times I use this column to explain rules and potential problems. Please bear with me as I do just that. IBS Score Shooting states in its rules (Section VI.3, Paragraph E, Subsection 7) "Firing more than one rifle is permitted. Range Master or Referee may permit the firing of a different rifle for record with the payment of an additional fee and a new registration card made out to cover." Please take note of the words **different rifle**. This means that a competitor can compete in both light varmint and heavy varmint as long as 2 rifles are used. Likewise a competitor can shoot in varmint-hunter and hunter class if he is using 2 different rifles. Last year as you have probably noticed Score Shooter of the Year was a very close contest. Near the end of the season match reports were very slow in reaching the statisticians. Also one range failed to submit a report and it was fortunate that none of the top competitors shot that match. Competitors go to the matches to compete and should not have to follow up on the match report getting to the proper people.

Another point of interest to many newer competitors is the required pre-registration for the IBS Score Nationals and the 200/300 Yard Score Championship. A letter of intent is to be sent to the host range 30 days prior to the match. Payment is not necessary at that time. However, if payment is sent and you do not attend the match, a full refund will be made.

I have just heard that the IBS Score Atlas has gone to print (well Cannon Copier actually). If all goes well, copies should be in the hands of your range director and anyone wishing a copy can contact me — Buddy Bullet. A donation for postage would be appreciated, but not necessary. Just remember, Be Careful Out There!!



May your X count be High,
B.B.

Varmint Score Shooter of the Year

SCORE SHOOTER of the YEAR
VARMINT for SCORE
CHAMPIONS
CHAMPIONS
International Benchrest Shooters
VARMINT HUNTER

Joe Gilbert of Augusta, Maine. IBS Varmint Score Shooter of the Year for the fourth time (1992).

PORTVILLE WINTER LEAGUE

December 20, 1992 (20 shooters) 100 yards: Al Skiver .3910, 2.) E.A. Smith .3932, 3.) Mike Gamble .3982. 200 yards: 1.) Paul Beaver .4236, 2.) Bob DeMonstoy .4750, 3.) Ron Czarnota .4982. Grand agg: 1.) Paul Beaver .4337, 2.) Bob DeMonstoy .4472, 3.) Al Skiver .4672.

January 3, 1993 (21 shooters) 100 yards: 1.) Dick Lockwood .3428, 2.) Mike Rosenswie .3526, 3.) Chuck Beaver .3576. 200 yards: 1.) Paul Beaver .2962, 2.) Mike Rosenswie .4140, 3.) Mike Gamble .4277. Grand agg: 1.) Paul Beaver .3693, 2.) Mike Rosenswie .3833, 3.) Mike Gamble .4010.

PRE-REGISTRATION

IBS 200/300 YARD "LONG DISTANCE" CHAMPIONSHIPS

June 12th and 13th, 1993

Union County Sportsmen's Club, Weikert, Pa.

Saturday 12th: LV 200 yards 9:00 am/300 yards - PM
Sunday 13th: HV 200 yards 8:00 am / 300 yards - PM

Bench Rotation / Warmups / or 3 Minute Sight-In.

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SOUTH CREEK WINTER LEAGUE

February 21, 1993, group match (12 shooters): 1.) Jim Borden .3620, 2.) Jack Deming .4100, 3.) Floyd Stohner .4160. Score match (6 shooters): 1.) Larry Jones 249-7x, 2.) Guy Green 245-7x, 3.) Dave Obert 243-4x.

March 7, 1993, group match (22 shooters): 1.) John Borden .2224, 2.) Randy Fritz .2742, 3.) Bill Gebhardt .2896. Score match: 1.) Jim Borden 250-13x, 2.) Floyd Stohner 249-9x, 3.) John Borden 248-12x.

March 21, 1993, group match (20 shooters): 1.) Tony Margelewicz .3328, 2.) Dave Obert .3330, 3.) Bill Gebhardt .3354.

Season year end standings (best 5 matches of the year), group: 1.) Floyd Stohner .3394, 2.) Bill Gebhardt .3448, 3.) Carl Lynn .3552, 4.) Jim Borden .3605, 5.) Guy Green .3914. Score rankings: 1.) Floyd Stohner 1245-41x, 2.) Joe Borden 1238-39x, 3.) Wendell Coye 1230-37x.

After the March 21st match was over we had our annual pizza party, and passed out the trophies. Floyd Stohner won the Hart gift certificate for the best five matches of the year. Hope all the shooters had a good time, and hope to see you next year.

South Creek/
Northern Tier Sportsmen

CAMILLUS WINTER LEAGUE

First group match, January 3rd, 1993. 100 yards, best 5 out of 6 groups shot, 16 shooters. 1.) Bob Lamanna .2614, 2.) Jim Kusche .3150, 3.) Bill Fuller .3856. We note that the winner's throw-away group was an .850. Mr. Lamanna should consider himself lucky that he was shooting in a "best 5 out of 6" match! The weather was 28 degrees, with freezing rain.

Second group match, January 17th, 1993. 100 yards, best 5 out of 6 groups shot. 1.) Tom Fargnoli .2686, 2.) Jack Sutton .2822, 3.) Jim Stekl .3006. The winner shot a .22 FCC, a wildcat cartridge designed by Tom Fargnoli and Wendell Coye, and based on the .30 American case. The weather was 35 degrees, with rain, and gusting winds.

Third group match, January 31st, 1993. 100 yards, best 5 out of 6 groups shot. 1.) Jim Kusche .2756, 2.) Jack Sutton .3028, 3.) Woody Ellison .3038. The weather was 32 degrees, with wet, blowing snow.

Fourth group match, February 14th, 1993. 100 yards, best 5 out of 6 groups shot. 22 shooters, in 20 degree weather, with a bright sky, and one foot of snow on the ground... giving a lot of vertical flyers. 1.) Jim Stekl .2736, 2.) Herb Hoverstad .3338, 3.) Bob Lamanna .3338. The agg winner shot his 6 American wildcat.

Fifth group match, February 28th, 1993. 100 yards, best 5 out of 6 groups shot. 23 shooters, 10 degree weather, bright sun, and now two feet of snow on the ground. 1.) Tom Fargnoli .2466, 2.) Jim Stekl .2954, 3.) George Getty .3194. Mr. Fargnoli again shot his 6 FCC wildcat. We are told that the .30 American brass is used as a basis for the wildcat, with a capacity equal to a full length BR. The second place winner also was firing a 6mm wildcat based on American brass. Small group of the day, a .192 by Jim Stekl, was nearly matched by Keri Otto, with a .195, shot with a .222.

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IBS/H/2	200 YD Hunter — Black 13x21	250	15	11.25
IBS/H/3	300 YD Hunter — Black 13x26	250	22	26.50

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DUNHAM'S BAY

Match #6 of the winter league, March 21st, 1993. 21 shooters, 100 meters, heavy varmint class. 1.) Tom Lake .2790, 2.) Paul Mitchell .2808, 3.) Jim Lyon .2922, 4.) Bob Griffin .3046, 5.) Bob Latino .3134. The agg winner shot a 6PPC, Wichita action, Chanlynn barrel, Leupold-Premier scope, 27.5 grains of H322 with Hollister 68 grain bullets and Federal 205 primers, in a Norm Dixon smithed and stocked rifle. Rocky Murray had a 248-10x to beat out four other shooters in the 100 yard hunter class. Bill Niemi was second, with a 244-6x, and Charlie Fountaine third, with a 243-1x. The hunter class winner shot a 6x250, an old wildcat that pops up now and again.

Match #7 of the winter league, March 28th, 1993. 37 shooters, 100 meters, heavy varmint class. 1.) Myles Hollister .2626, 2.) Bob Latino .2748, 3.) Jim Lyon .2876, 4.) Bob Griffin .2892, 5.) Barry Devliegher .3012. The agg winner shot a 6PPC, Wichita action, Shilen barrel, Leupold 32x scope, 29.0 grains of H322 with his won 67 grain bullets, and Federal primers, in a rifle smithed by himself, and stocked by Norm Dixon. In the accompanying 11 shooter hunter class match, it was: 1.) Bill Niemi 248-10x, 2.) Rocky Murray 248-8x, 3.) Brian Niemi 245-6x. The agg winner here shot his .30 Viper wildcat, using his own barrel, and bullets made in his own dies.

LEFT THE RANGE

HANK GONNELLA, of Camillus, New York, died on March 19th, at his home. He was the past president and co-founder of the Camillus Sportsmen's Club. His involvement with the International Benchrest Shooters went back to the founding of that group in 1970. He was on the cover of Precision Shooting magazine in 1984. IBS shooters who actively shot on the "match circuit" will remember him as one of the driving forces behind bringing the Camillus range into prominence on the circuit, and maintaining its reputaton as a hospitable and pleasant place to shoot.

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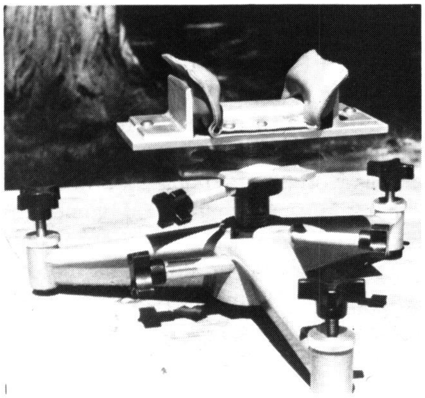

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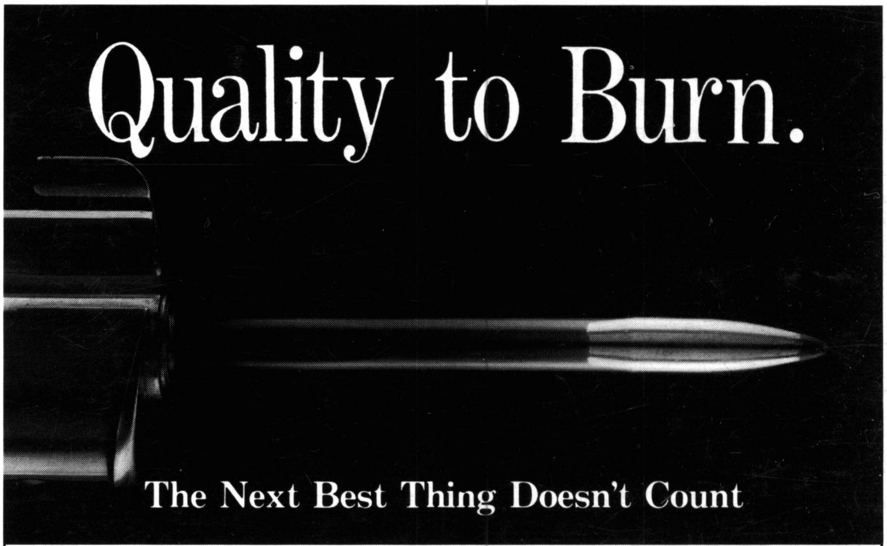

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